

**APPENDIX Y:**

**Commercial Forestry Information**



Plum Creek Herbicide spraying in KBIC tribal boundaries

	<u>Herbicide(s)</u>	<u>Rates</u>	<u>Plantation Name</u>	<u>Plantation number</u>	<u>Acres</u>	<u>Town</u>	<u>Range</u>	<u>Sec.</u>	<u>Sub.</u>
2005	Razor Pro/Garlon/oust	2/1/.5	N. Arvon Rd. Poor Farm N. Robillard	N197 N173 N204	31 22 71	51 50 50	32 33 33	36 22 14	NE1/4SE1/4 NE1/4SE1/4 S1/2
2006	Accord Conc.	1.1 qts.	N. Conley Poor Farm Laws Lake West N. Robillard	N182 N173 N163 N204	22 22 55 71	50 50 50 50	33 33 33 33	27 22 13 14	W1/2SW1/4 NE1/4SE1/4 NE1/4 S1/2
2007	Velpar/Oust	4 qts/.5 oz.	N. Arvon Rd. Snowmobile trail	N197 N186	31 37.5	51 51	32 31	36 31	NE1/4SE1/4 center of sec.
	Chopper/Glyphosate/oust	30 Oz./3 qts./1 oz.	Indian Road South Pages	WPC004 WPC005	42.5 42.5	50 51	33 32	13 25	SE1/4 SE1/4SE1/4
2008	Accord/Oust	1.1 qts/.5oz.	Laws Lake West Poor Farm	N163 N173	55 22	50 50	33 33	13 22	NE1/4 NE1/4SE1/4
2009	Accord/Oust	1.1 qts/.5oz.	N. Robillard	N204	71	50	33	14	S1/2
2010	Velpar/Oust	4 qts/.5 oz.	South Pages	WPC005	42.5	51	32	25	SE1/4SE1/4
	Accord/Oust	1.1 qts/.5oz.	Laws Lake West N. Robillard	N163 N204	10 71	50 50	33 33	12 14	S1/2SE1/4 S1/2

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

Effective Date: 17-Nov-06  
Product Code: 38321  
MSDS: 004422

## GARLON\* 3A HERBICIDE

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** Garlon\* 3A Herbicide

#### COMPANY IDENTIFICATION:

Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268-1189

### 2. HAZARDOUS IDENTIFICATIONS:

#### EMERGENCY OVERVIEW

Light purple-pink liquid, ammonia-like odor. May cause eye irritation with corneal injury. May cause skin irritation. Toxic to aquatic organisms.

**EMERGENCY PHONE NUMBER:** 800-992-5994

### 3. COMPOSITION/INFORMATION ON INGREDIENTS:

COMPONENT	CAS NUMBER	W/W%
Triclopyr TEA Salt	057213-69-1	44.4
Triethylamine	000121-44-8	3.0
Ethanol	000064-17-5	2.1
Balance		50.5

### 4. FIRST AID:

**EYES:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

**SKIN:** Wash skin with plenty of water.

**INGESTION:** Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth to an unconscious person.

**INHALATION:** No emergency medical treatment necessary.

**NOTE TO PHYSICIAN:** Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach & lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. Exposure to amine vapors may cause minor transient edema of the corneal epithelium (glaucoma) with blurred vision, blue haze & halos around bright objects. Effects disappear in a few hours and temporarily reduce ability to drive vehicles. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### 5. FIRE FIGHTING MEASURES:

**FLASH POINT:** 110°F (43°C)

**METHOD USED:** TCC

#### FLAMMABLE LIMITS

LFL: Not determined

UFL: Not determined

**EXTINGUISHING MEDIA:** Alcohol foam and CO<sub>2</sub>.

**FIRE & EXPLOSION HAZARDS:** Toxic, irritating vapors may be formed or given off if product is involved in fire. Although product is water-based, it has a flash point due to the presence of small amounts of ethanol and triethylamine.

**FIRE-FIGHTING EQUIPMENT:** Use positive-pressure, self-contained breathing apparatus and full protective clothing.

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Contain small spills and absorb with an inert material such as clay or dry sand. Report large spills to Dow AgroSciences at 800-992-5994.

### 7. HANDLING AND STORAGE:

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** **HANDLING:** Keep out of reach of children. Causes irreversible eye damage. Harmful if inhaled or absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic skin reaction in some individuals. Avoid contact with eyes, skin, clothing, breathing vapor, or spray mist. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

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**STORAGE:** Store above 28°F or agitate before use. Store in original container. See product label for handling/storage precautions relative to the end use of this product.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

#### EXPOSURE GUIDELINE(S):

Ethanol (ethyl alcohol): ACGIH TLV and OSHA PEL are 1000 ppm. ACGIH classification is A4.  
Triclopyr TEA Salt: Dow AgroSciences Industrial Hygiene Guideline is 2 mg/M<sup>3</sup> as acid equivalent; Skin.  
Triethylamine: ACGIH TLV is 1 ppm TWA, 3 ppm STEL, Skin. OSHA PEL is 10 ppm TWA, 15 ppm STEL.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

#### RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

**EYE PROTECTION:** Use chemical goggles. Eye wash fountain should be located in immediate work area. If exposure causes eye discomfort, use a full-face respirator.

**SKIN PROTECTION:** When prolonged or frequently repeated contact could occur, use chemically protective clothing resistant to this material. Selection of specific items such as face shield, gloves, boots, and apron or full-body suit will depend on operation.

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use a NIOSH approved air-purifying respirator.

**APPLICATORS AND ALL OTHER HANDLERS:** Refer to the product label for personal protective clothing and equipment.

### 9. PHYSICAL AND CHEMICAL PROPERTIES:

**BOILING POINT:** Not determined  
**VAPOR PRESSURE:** Not determined  
**VAPOR DENSITY:** Not applicable  
**SOLUBILITY IN WATER:** Miscible  
**SPECIFIC GRAVITY:** 1.135 (68/68°F)  
**APPEARANCE:** Light purple/pink liquid  
**ODOR:** Ammonia-like odor

### 10. STABILITY AND REACTIVITY:

**STABILITY: (CONDITIONS TO AVOID)** Avoid sources of ignition if temperature is near or above flash point.

**INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)**  
Any oxidizing agent. Consult manufacturer for specific cases.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Nitrogen oxides and hydrogen chloride may be formed under fire conditions.

**HAZARDOUS POLYMERIZATION:** Not known to occur.

### 11. TOXICOLOGICAL INFORMATION:

**POTENTIAL HEALTH EFFECTS:** This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

**EYE:** May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur. Vapor of amines may cause swelling of the cornea resulting in visual disturbances such as blurred or hazy vision. Bright lights may appear to be surrounded by halos. Effects may be delayed and typically disappear spontaneously.

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**SKIN:** Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals. With the dilute mix, no allergic skin reaction is expected. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD<sub>50</sub> for skin absorption in rabbits is >5,000 mg/kg.

**INGESTION:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration. The oral LD<sub>50</sub> for rats is 2,574 mg/kg (male) and 1,847 mg/kg (female).

**INHALATION:** Brief exposure (minutes) is not likely to cause adverse effects.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** Effects have been reported on the following organs: liver and kidney.

**CANCER INFORMATION:** Triclopyr did not cause cancer in laboratory animal studies.

**TERATOLOGY (BIRTH DEFECTS):** Triclopyr did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother. Ethanol has been shown to cause birth defects and toxicity to the fetus in laboratory animal tests. It has also been shown to cause human fetotoxicity and/or birth defects when ingested during pregnancy.

**REPRODUCTIVE EFFECTS:** For triclopyr, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

**MUTAGENICITY:** For triclopyr and ethanol: in-vitro genetic toxicity studies were negative. For triclopyr: animal genetic toxicity studies were negative. For ethanol: animal genetic toxicity studies were negative in some cases and positive in other cases.

### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL FATE:

#### MOVEMENT & PARTITIONING:

Based largely or completely on information for triclopyr. Bioconcentration potential is low (BCF <100 or Log Pow <3).

#### DEGRADATION & PERSISTENCE:

Biodegradation under aerobic static laboratory conditions is high (BOD<sub>20</sub> or BOD<sub>28</sub>/ThOD >40%).

The 20-Day biochemical oxygen demand (BOD<sub>20</sub>) is 0.30 p/p.

Theoretical oxygen demand (ThOD) is calculated to be 0.75 p/p.

#### ECOTOXICOLOGY:

Material is slightly toxic to aquatic organisms on an acute basis (LC<sub>50</sub> or EC<sub>50</sub> is between 10 and 100 mg/L in most sensitive species).

### 13. DISPOSAL CONSIDERATIONS:

**DISPOSAL METHOD:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

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### 14. TRANSPORT INFORMATION:

#### U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

For non-bulk shipments by land:  
This material is not regulated for transport.

For bulk shipments by land:  
COMBUSTIBLE LIQUID, N.O.S. (TRIETHYLAMINE,  
ETHANOL)/COMBUSTIBLE LIQUID/NA1993/PGIII

For shipments by air or vessel:  
FLAMMABLE LIQUIDS, N.O.S. (TRIETHYLAMINE,  
ETHANOL)/3/UN1993/PGIII

### 15. REGULATORY INFORMATION:

**NOTICE:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

#### U.S. REGULATIONS

**SARA 313 INFORMATION:** This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
Triethylamine	000121-44-8	3.0%

**SARA HAZARD CATEGORY:** This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard  
A delayed health hazard  
A fire hazard

**TOXIC SUBSTANCES CONTROL ACT (TSCA):** All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

**STATE RIGHT-TO-KNOW:** The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Ethanol	000064-17-5	NJ1 NJ3 PA1
Triethylamine	000121-44-8	NJ1 NJ3 PA1 PA3

NJ1=New Jersey Special Health Hazard Substance (present at > or = to 0.1%).

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

PA1=Pennsylvania Hazardous Substance (present at > or = to 1.0%).

PA3=Pennsylvania Environmental Hazardous Substance (present at > or = to 1.0%).

**OSHA HAZARD COMMUNICATION STANDARD:** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

CATEGORY	RATING
Health	3
Flammability	2
Reactivity	0

**COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND):** This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA which may require reporting of releases:

Chemical Name	CAS Number	RQ	% in Product
Triethylamine	000121-44-8	5000	3.0%

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RCRA Categorization Hazardous Code:  
Triethylamine = U404

### 16. OTHER INFORMATION:

**MSDS STATUS:** Revised Section: 2, 3, 11, 12, 13, 15  
Reference: DR-0121-6064  
Replaces MSDS dated: 11/24/03  
Document Code: D03-101-004  
Replaces Document Code: D03-101-003

The Information Herein Is Given In Good Faith, But No  
Warranty, Express or Implied, Is Made. Consult Dow  
AgroSciences for Further Information.

\*Trademark of Dow AgroSciences LLC



**Du Pont**  
**Material Safety Data Sheet**

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"DuPont" "Velpar" L Herbicide  
M0000056 Revised 4-NOV-2010  
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Substance ID :130000000166  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"Velpar" is a registered trademark of DuPont.

"DuPont" is a trademark of DuPont.

Corporate MSDS Number : DU003032

Tradenames and Synonyms

"VELPAR" L  
"VELPAR"  
DPX-A3674 250SL  
B10048626

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont  
1007 Market Street  
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.  
302-774-1000)  
Transport Emergency : CHEMTREC 1-800-424-9300 (outside U.S.  
703-527-3887)  
Medical Emergency : 1-800-441-3637 (outside the U.S.  
302-774-1000)

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
*HEXAZINONE (3-Cyclohexyl-6-(dimethylamino)-1-methyl- 1,3,5-triazine-2,4(1H,3H)-dione)	51235-04-2	25
INERT INGREDIENTS (Includes Percentages of the Following):		75
ETHANOL	64-17-5	40-45

\* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Printed on 11/04/2010

**Du Pont**  
**Material Safety Data Sheet**

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HAZARDS IDENTIFICATION  
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Emergency Overview

DANGER! CAUSES EYE DAMAGE. Corrosive, causes irreversible eye damage. Harmful if swallowed. Do not get in eyes or on clothing. Wash thoroughly with soap and water after handling.

Potential Health Effects

Based on animal data, eye contact with Velpar L may cause corneal opacity or clouding of the eye.

Based on animal data, skin contact with Hexazinone may cause skin irritation with discomfort or rash.

Based on data from animal testing, ingestion of large amounts of Hexazinone may cause effects on the liver.

Significant skin permeation and systemic toxicity after contact appears unlikely.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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FIRST AID MEASURES  
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First Aid

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

INHALATION: No specific intervention is indicated, as the compound is not likely to be hazardous by inhalation.

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Consult a physician if necessary.

#### Notes to Physicians

Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for emergency medical treatment information.

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#### FIRE FIGHTING MEASURES

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##### Flammable Properties

Flash Point : 23-25 C (73-77 F)  
Method : Closed Cup

Flammable liquid. Vapor forms explosive mixture with air. Heating can release vapors which can be ignited.

##### Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

##### Fire Fighting Instructions

Wear self-contained breathing apparatus. Use water spray. Cool tank/container with water spray.

If area is exposed to fire and conditions permit, let fire burn itself out. Burning chemicals may produce by-products more toxic than the original material. If product is on fire, wear self-contained breathing apparatus and full protective equipment. Use water spray. Control runoff.

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#### ACCIDENTAL RELEASE MEASURES

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##### Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Emergency Response - Chemical resistant coveralls, waterproof gloves, waterproof boots and face/eye protection. If dusting occurs, use NIOSH approved respirator protection.

##### Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or

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low areas.

#### Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material.  
Shovel or sweep up.

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#### HANDLING AND STORAGE

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##### Handling (Personnel)

Do not get on clothing. Do not get in eyes. Avoid breathing vapors or mist. Avoid contact with skin. Wash thoroughly after handling. Wash clothing after use. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

##### Handling (Physical Aspects)

Keep away from heat, sparks and flames. Keep container tightly closed.

##### Storage

Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place.

Do not subject product to temperatures below 32 deg F.

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#### EXPOSURE CONTROLS/PERSONAL PROTECTION

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##### Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

##### Personal Protective Equipment

Always follow label instructions when using this product.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks.
- Protective eyewear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such

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instructions for washables, use detergent and hot water.  
Keep and wash PPE separately from other laundry.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Chemical resistant gloves made of any waterproof material.
- Coveralls.
- Shoes plus socks.
- Protective eyewear.

#### Exposure Guidelines

##### Applicable Exposure Limits

###### HEXAZINONE

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 10 mg/m3, 8 & 12 Hr. TWA, total dust 5 mg/m3, 8 & 12 Hr. TWA, respirable dust

###### ETHANOL

PEL (OSHA)	: 1,000 ppm, 1,900 mg/m3, 8 Hr. TWA
AEL * (DuPont)	: STEL 1000 ppm, A3, 1000 ppm, 8 & 12 Hr. TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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#### PHYSICAL AND CHEMICAL PROPERTIES

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##### Physical Data

Vapor Pressure	: 33 mm Hg @ 25 C (77 F)
Solubility in Water	: Dispersible
Odor	: Alcoholic
Form	: Liquid
Color	: Light yellow
Specific Gravity	: 0.9776

##### Physical Hazards

FLAMMABLE. Keep away from heat, sparks, and open flames.  
Keep container closed.

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#### STABILITY AND REACTIVITY

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##### Chemical Stability

Stable at normal temperatures and storage conditions.

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**Incompatibility with Other Materials**

Incompatible with strong acids or bases (slowly hydrolyzes).

**Polymerization**

Polymerization will not occur.

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**TOXICOLOGICAL INFORMATION**  
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**Animal Data****VELPAR L**

Oral LD50: 4120 mg/kg in rats  
Dermal LD50: > 5000 mg/kg in rabbits  
Inhalation 4 hour LC50: > 5.0 mg/L in rats

VELPAR L is corrosive to the eye. It was slightly irritating to the skin, but is not a skin sensitizer in animals.

**HEXAZINONE**

Repeated skin applications indicated no irritation or systemic activity.

Repeated dosing by ingestion of excessive dietary levels of Hexazinone resulted in weight loss, alterations in liver weights alterations in blood chemical measurements, and alterations in enzyme activities. No evidence of pathological organ damage was observed. Long-term dosing produced decreased weight gain, alterations in hematology, clinical chemistry, and blood enzyme levels, increased liver weights in some species, and pathological liver changes.

Animal data showed that chronic, excessive dietary exposure to Hexazinone produced a slight, equivocal increase in liver tumors in female mice.

Animal data show developmental effects only at exposure levels producing other toxic effects in the adult animal. Animal testing indicates Hexazinone does not have reproductive effects. The weight of evidence from a battery of cell culture and laboratory animal tests indicates Hexazinone does not cause genetic toxicity.

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**ECOLOGICAL INFORMATION**  
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**Ecotoxicological Information****AQUATIC TOXICITY:**

96-Hour LC50 - Fathead minnows: 274 mg/L

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96-Hour LC50 - Bluegill sunfish: > 370 mg/L  
96-Hour LC50 - Rainbow trout: > 320 mg/L

**AVIAN TOXICITY:**

LD50 - Bobwhite quail: 2258 mg/kg

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**DISPOSAL CONSIDERATIONS**  
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**Waste Disposal**

Do not contaminate water, food or feed by disposal. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**ENVIRONMENTAL HAZARDS**

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

See product label for additional application instructions relating to environmental precautions.

**Container Disposal**

CONTAINER REFILLING AND DISPOSAL: Refer to the product label for instructions. Do not transport if container is damaged or leaking.

In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

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**TRANSPORTATION INFORMATION**  
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**# Shipping Information****DOT/IMO**

Proper Shipping Name	: Ethanol Solution
Hazard Class	: 3
UN No.	: UN 1170
Special Information	: Flashpoint: 23 deg C (74 deg F)
Packing Group	: III
Marine Pollutant	: Yes (Hexazinone)

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**REGULATORY INFORMATION**  
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**U.S. Federal Regulations**

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes

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Chronic : No  
Fire : Yes  
Reactivity : No  
Pressure : No

In the United States this product is regulated by the US Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

EPA Reg. No. 352-392

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OTHER INFORMATION  
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NFPA, NPCA-HMIS

NFPA Rating  
Health : 2  
Flammability : 3  
Reactivity : 0

NPCA-HMIS Rating  
Health : 2  
Flammability : 3  
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : DuPont Crop Protection  
Wilmington DE 19898  
Telephone : 1-888-638-7668

# Indicates updated section.

# Material Safety Data Sheet



## DuPont™ Oust® XP Herbicide

Version 2.1

Revision Date 01/04/2011

Ref. 130000029167

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ Oust® XP Herbicide  
Tradename/Synonym : DPX-T5648  
B11159747  
SULFOMETURON METHYL: {Methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl)amino]-carbonyl]amino]sulfonyl]benzoate}  
MSDS Number : 130000029167  
Product Use : Herbicide  
Manufacturer : DuPont  
1007 Market Street  
Wilmington, DE 19898  
Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)  
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)  
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### Caution

Causes moderate eye irritation. Avoid contact with skin, eyes and clothing.

#### Potential Health Effects

This section includes potential acute adverse effects which could occur if this material is not used according to the label.

Skin : May cause: Irritation with discomfort or rash.

Eyes : May cause: Irritation with discomfort, pain, redness, or visual impairment.

Ingestion

# Material Safety Data Sheet



## DuPont™ Oust® XP Herbicide

Version 2.1

Revision Date 01/04/2011

Ref. 130000029167

Sulfometuron methyl : Effects due to ingestion may include: Red blood cell destruction which could produce tiredness, rapid heartbeat, dizziness, pale skin, leg cramps, shortness of breath, jaundice (yellow tinge to skin and eyes)

### Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Sulfometuron methyl	74222-97-2	75 %
Other Ingredients		25 %

## SECTION 4. FIRST AID MEASURES

- Skin contact : The material is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. Consult a physician if necessary.
- Eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Inhalation : No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.
- Ingestion : No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.

# Material Safety Data Sheet



## DuPont™ Oust® XP Herbicide

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General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.  
For medical emergencies involving this product, call toll free 1-800-441-3637.  
See Label for Additional Precautions and Directions for Use.

### SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties  
Flash point : not applicable

Lower explosion limit : 0.092 g/l

Suitable extinguishing media : Water spray, Dry chemical, Foam, Carbon dioxide (CO2)

Unsuitable extinguishing media : High volume water jet, (contamination risk)

Firefighting Instructions : Wear full protective clothing and self-contained breathing apparatus.  
(on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers / tanks with water spray.  
Control Runoff.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Use personal protective equipment.

Spill Cleanup : Sweep up and shovel into suitable containers for disposal.

Accidental Release Measures : Prevent material from entering sewers, waterways, or low areas.  
Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

# Material Safety Data Sheet



## DuPont™ Oust® XP Herbicide

Version 2.1

Revision Date 01/04/2011

Ref. 130000029167

### SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.
- Handling (Physical Aspects) : Keep away from heat and sources of ignition. Under severe dusting conditions, this material may form explosive mixtures in air.
- Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Keep tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : Use only with adequate ventilation. When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.
- Personal protective equipment
- Skin and body protection : Applicators and other handlers must wear:  
Long sleeved shirt and long pants  
Shoes plus socks  
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:  
Coveralls  
Chemical resistant gloves made of any waterproof material  
Shoes plus socks
- Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Exposure Guidelines

# Material Safety Data Sheet



## DuPont™ Oust® XP Herbicide

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### Exposure Limit Values

Sulfometuron methyl

TLV

(ACGIH)

5 mg/m<sup>3</sup> TWA

AEL \*

(DUPONT)

10 mg/m<sup>3</sup> 8 & 12 hr. TWA Total dust.

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: solid, dry, free flowing granules
Color	: off-white
Odor	: none
pH	: no data available
Bulk density	: 39 lb/ft <sup>3</sup>
	packed
Bulk density	: 33 lb/ft <sup>3</sup>
	loose
Water solubility	: dispersible

## SECTION 10. STABILITY AND REACTIVITY

Stability	: Stable at normal temperatures and storage conditions.
Incompatibility	: None reasonably foreseeable.
Hazardous decomposition products	: Decomposition will not occur.
Hazardous reactions	: Hazardous polymerization will not occur.

## SECTION 11. TOXICOLOGICAL INFORMATION

DuPont™ Oust® XP Herbicide

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Inhalation 4 h LC50	:	> 5.3 mg/l , rat
Dermal LD50	:	> 5,000 mg/kg , rabbit
Oral LD50	:	> 5,000 mg/kg , rat
Skin irritation	:	slight irritation, rabbit
Eye irritation	:	slight irritation, rabbit
Sensitisation	:	Animal test did not cause sensitization by skin contact., guinea pig

### Sulfometuron methyl

#### Repeated dose toxicity

: The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

#### Oral

multiple species

Reduced body weight gain, Liver effects, Red blood cell destruction causing abnormal decrease in number of red blood cells (anaemia), altered blood chemistry

Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.
Teratogenicity	:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

## SECTION 12. ECOLOGICAL INFORMATION

### Aquatic Toxicity

#### Sulfometuron methyl

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 148 mg/l
96 h LC50	:	Lepomis macrochirus (Bluegill sunfish) > 150 mg/l

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120 h EC50 : Pseudokirchneriella subcapitata (green algae) 0.0046 mg/l

48 h EC50 : Daphnia magna (Water flea) > 150 mg/l

Toxicity to other organisms  
Sulfometuron methyl

LC50 : Anas platyrhynchos (Mallard duck) > 5,000 ppm  
Dietary

LC50 : Colinus virginianus (Bobwhite quail) > 5,620 ppm  
Dietary

Additional ecological information : Environmental Hazards: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

### SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Disposal : Container Refilling and Disposal:  
Refer to the product label for instructions.  
Do not transport if this container is damaged or leaking.

In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

### SECTION 14. TRANSPORT INFORMATION

IATA\_C UN number : 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s.  
(Sulfometuron methyl)

Class : 9

Packing group : III

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# Material Safety Data Sheet



## DuPont™ Oust® XP Herbicide

Version 2.1

Revision Date 01/04/2011

Ref. 130000029167

IMDG	Labelling No.	: 9MI
	UN number	: 3077
	Proper shipping name	: Environmentally hazardous substance, solid, n.o.s. (Sulfometuron methyl)
	Class	: 9
	Packing group	: III
	Labelling No.	: 9
	Marine pollutant	: yes (Sulfometuron methyl)

Not regulated as a hazardous material by DOT.

### SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s)	: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
Title III hazard classification	: Acute Health Hazard: Yes Chronic Health Hazard: No Fire: No Reactivity/Physical hazard: No Pressure: No
EPA Reg. No.	: 352-601 In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Sucrose, Trisodium phosphate dodecahydrate, 1,2-Benzisothiazol-3(2H)-one 1,1-dioxide
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances

# Material Safety Data Sheet



## DuPont™ Oust® XP Herbicide

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identified as carcinogens, mutagens or teratogens): 1,2-Benzisothiazol-3(2H)-one 1,1-dioxide

### SECTION 16. OTHER INFORMATION

	NFPA	HMIS
Health :	1	1
Flammability :	1	1
Reactivity/Physical hazard :	0	0

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® Registered trademark of E.I. du Pont de Nemours and Company

Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

Effective Date: 3/23/04  
Product Code: 84820  
MSDS: 006694

## ACCORD\* CONCENTRATE HERBICIDE

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** Accord\* Concentrate Herbicide

#### COMPANY IDENTIFICATION:

Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268-1189

### 2. COMPOSITION/INFORMATION ON INGREDIENTS:

Glyphosate IPA:	CAS # 038641-94-0	53.8%
N-(phosphono-methyl) glycine, Isopropylamine Salt		
Balance, Total		46.2%

### 3. HAZARDOUS IDENTIFICATIONS:

#### EMERGENCY OVERVIEW

Clear, pale yellow liquid. May cause eye irritation. Slightly toxic to aquatic organisms.

**EMERGENCY PHONE NUMBER:** 800-992-5994

### 4. FIRST AID:

**EYE:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**SKIN:** Wash skin with plenty of water.

**INGESTION:** No emergency medical treatment necessary.

**INHALATION:** Remove person to fresh air; if effects occur, consult a physician.

**NOTE TO PHYSICIAN:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### 5. FIRE FIGHTING MEASURES:

**FLASH POINT:** >214°F (>101°C)

**METHOD USED:** Setaflash

#### FLAMMABLE LIMITS:

LFL: Not applicable  
UFL: Not applicable

**EXTINGUISHING MEDIA:** Foam, CO<sub>2</sub>, Dry Chemical

**FIRE AND EXPLOSION HAZARDS:** Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Toxic irritating gases may be formed under fire conditions.

**FIRE-FIGHTING EQUIPMENT:** Use positive-pressure, self-contained breathing apparatus and full protective equipment.

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS:** Absorb small spills with an inert absorbent material such as Hazorb, Zorball, sand, or dirt. Report large spills to Dow AgroSciences on 800-992-5994.

### 7. HANDLING AND STORAGE:

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors and spray mist. Handle concentrate in ventilated area. Wash thoroughly with soap and water after handling and before eating, chewing gum, using tobacco, using the toilet or smoking. Keep away from food, feedstuffs, and water supplies. Store in original container with the lid tightly closed. Store above 10°F (-12°C) to keep from crystallizing.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

**EXPOSURE GUIDELINES:** None established

**ENGINEERING CONTROLS:** Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

**RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:**

**EYE/FACE PROTECTION:** Use safety glasses.

**SKIN PROTECTION:** No precautions other than clean body-covering clothing should be needed.

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

Effective Date: 3/23/04  
Product Code: 84820  
MSDS: 006694

## ACCORD\* CONCENTRATE HERBICIDE

**RESPIRATORY PROTECTION:** For most conditions, no respiratory protection should be needed; however, if discomfort is experienced, use a NIOSH approved air-purifying respirator.

**APPLICATIONS AND ALL OTHER HANDLERS:** Please refer to the product label for personal protective clothing and equipment.

### 9. PHYSICAL AND CHEMICAL PROPERTIES:

**APPEARANCE:** Clear, pale yellow liquid

**DENSITY:** 10.0 - 10.5 lbs/gal

**pH:** 4.8 - 5.0

**ODOR:** None

**SOLUBILITY IN WATER:** Miscible

**SPECIFIC GRAVITY:** 1.21 gm/L

**FREEZING POINT:** -7°F - -10°F (-21°C - -25°C)

### 10. STABILITY AND REACTIVITY:

**STABILITY: (CONDITIONS TO AVOID)** Stable under normal storage conditions.

**INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)** Galvanized or unlined steel (except stainless steel) containers or spray tanks may produce hydrogen gas which may form a highly combustible gas mixture.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known.

**HAZARDOUS POLYMERIZATION:** Not known to occur.

### 11. TOXICOLOGICAL INFORMATION:

**EYE:** May cause slight temporary eye irritation. Corneal injury is unlikely.

**SKIN:** Essentially non-irritating to skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD<sub>50</sub> for skin absorption in rabbits is >5000 mg/kg. Did not cause allergic skin reactions when tested in guinea pigs.

**INGESTION:** Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. The oral LD<sub>50</sub> for rats is >5000 mg/kg.

**INHALATION:** Brief exposure (minutes) is not likely to cause adverse effects. The aerosol LC<sub>50</sub> for rats is >6.37 mg/L for 4 hours.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** For a similar material, glyphosate, in animals, effects have been reported on the following organ: liver.

**CANCER INFORMATION:** A similar material, glyphosate, did not cause cancer in laboratory animals.

**TERATOLOGY (BIRTH DEFECTS):** For glyphosate IPA, available data are inadequate for evaluation of potential to cause birth defects.

**REPRODUCTIVE EFFECTS:** For glyphosate IPA, available data are inadequate to determine effects on reproduction.

**MUTAGENICITY:** For a similar material, glyphosate, in-vitro and animal genetic toxicity studies were negative.

### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL DATA:

#### ECOTOXICOLOGY:

Material is practically non-toxic to aquatic organisms on an acute basis (LC<sub>50</sub> or EC<sub>50</sub> is >100 mg/L in most sensitive species tested).

Acute LC<sub>50</sub> for rainbow trout (*Oncorhynchus mykiss*) is >2500 mg/L.

Acute immobilization EC<sub>50</sub> in water flea (*Daphnia magna*) is 918 mg/L.

Material is practically non-toxic to birds on an acute basis (LD<sub>50</sub> is >2000 mg/kg).

Acute oral LD<sub>50</sub> in bobwhite (*Colinus virginianus*) is >2000 mg/kg.

The LC<sub>50</sub> in earthworm *Eisenia foetida* is >1000 mg/kg. Acute contact LD<sub>50</sub> in honey bee (*Apis mellifera*) is >100 µg/bee.

Acute oral LD<sub>50</sub> in honey bee (*Apis mellifera*) is >100 µg/bee.

Growth inhibition EC<sub>50</sub> in green alga (*Selenastrum capricornutum*) is 127 mg/L.

Growth inhibition EC<sub>50</sub> in duckweed (*Lemna sp.*) is 24.4 mg/L.

### 13. DISPOSAL CONSIDERATIONS:

**DISPOSAL METHOD:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities.

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

Effective Date: 3/23/04  
Product Code: 84820  
MSDS: 006694

## ACCORD\* CONCENTRATE HERBICIDE

This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

### 14. TRANSPORT INFORMATION:

#### U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

For all package sizes and modes of transportation:  
This material is not regulated for transport.

### 15. REGULATORY INFORMATION:

**NOTICE:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

#### U.S. REGULATIONS

**SARA 313 INFORMATION:** To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

**SARA HAZARD CATEGORY:** This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Not to have met any hazard category

**TOXIC SUBSTANCES CONTROL ACT (TSCA):** All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

**STATE RIGHT-TO-KNOW:** This product is not known to contain any substances subject to the disclosure requirements of

New Jersey  
Pennsylvania

**OSHA HAZARD COMMUNICATION STANDARD:** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND):** To the best of our knowledge, this product contains no chemical subject to reporting under CERCLA.

#### NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

CATEGORY	RATING
Health	1
Flammability	1
Reactivity	0

### 16. OTHER INFORMATION:

**MSDS STATUS:** Revised Sections: 3,4,11,12,13,14 & 15  
Reference: DR-0361-8028  
Replaces MSDS Dated: 1/12/00  
Document Code: D03-145-002  
Replaces Document Code: D03-145-001

The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult Dow AgroSciences For Further Information.



The Chemical Company

## Safety Data Sheet CHOPPER GEN 2

Revision date : 2009/10/01  
Version: 1.0

Page: 1/8  
(30335622/SDS CPA US/EN)

### 1. Product and Company Identification

Company

BASF CORPORATION  
100 Campus Drive  
Florham Park, NJ 07932, USA

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300  
BASF HOTLINE: 1-800-832-HELP

Substance number: 000000234359  
Molecular formula: C(13) H(15) N(3) O(3). C(3) H(9) N  
Chemical family: imidazole derivative  
Synonyms: Isopropylamine salt of imazapyr

### 2. Hazards Identification

Emergency overview

**CAUTION:**

May cause moderate but temporary irritation to the eyes.  
Prolonged or repeated skin contact may cause sensitization or allergic reactions.  
HARMFUL IF SWALLOWED.  
KEEP OUT OF REACH OF CHILDREN.  
KEEP OUT OF REACH OF DOMESTIC ANIMALS.  
Avoid contact with the skin, eyes and clothing.  
Avoid inhalation of mists/vapours.

See Product Label for additional precautionary statements.

State of matter: liquid  
Colour: transparent  
Colour: light yellow  
Odour: odourless

Potential health effects

**Primary routes of exposure:**

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

**Acute toxicity:**

Slightly toxic after single ingestion. Relatively nontoxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

**Irritation / corrosion:**

May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

**Sensitization:**

Caused skin sensitization in animal studies.

# Safety Data Sheet

## CHOPPER GEN 2

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### Medical conditions aggravated by overexposure:

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

### Potential environmental effects

#### **Aquatic toxicity:**

There is a high probability that the product is not acutely harmful to fish. There is a high probability that the product is not acutely harmful to aquatic invertebrates. Acutely harmful for aquatic plants.

#### **Terrestrial toxicity:**

With high probability not acutely harmful to terrestrial organisms.

---

## 3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
81510-83-0	26.7 %	imazapyr isopropylamine salt
	73.3 %	Proprietary ingredients

---

## 4. First-Aid Measures

### **General advice:**

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

### **If inhaled:**

Remove the affected individual into fresh air and keep the person calm.

### **If on skin:**

Rinse skin immediately with plenty of water for 15 - 20 minutes.

### **If in eyes:**

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

### **If swallowed:**

Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

### Note to physician

Antidote:	No known specific antidote.
Treatment:	Treat symptomatically.

---

## 5. Fire-Fighting Measures

### Flash point:

Based on the high water content the determination of the flash point seems not to be necessary.

### Autoignition:

Based on the water content the product does not ignite.

### **Suitable extinguishing media:**

foam, dry extinguishing media, carbon dioxide, water spray

# Safety Data Sheet

## CHOPPER GEN 2

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### Hazards during fire-fighting:

carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons,  
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a fire.

### Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

### Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

---

## 6. Accidental release measures

### Personal precautions:

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

### Environmental precautions:

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

### Cleanup:

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

---

## 7. Handling and Storage

### Handling

#### General advice:

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

#### Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

### Storage

#### General advice:

Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

# Safety Data Sheet

## CHOPPER GEN 2

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(30335622/SDS CPA US/EN)

### **Storage incompatibility:**

General advice: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

### **Temperature tolerance**

Protect from temperatures below: 0 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

---

## 8. Exposure Controls and Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

### **Advice on system design:**

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

### **Personal protective equipment**

#### **RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:**

##### **Respiratory protection:**

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

##### **Hand protection:**

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

##### **Eye protection:**

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

##### **Body protection:**

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

##### **General safety and hygiene measures:**

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

---

## 9. Physical and Chemical Properties

Form:	liquid
Odour:	odourless
Colour:	transparent

# Safety Data Sheet

## CHOPPER GEN 2

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pH value:	light yellow 6.8	( 25 °C)
Freezing point:	approx. 0 °C	( 1,013.3 hPa) Information applies to the solvent.
Boiling point:	approx. 100 °C	( 1,013.3 hPa) Information applies to the solvent.
Vapour pressure:	approx. 23.3 hPa	( 20 °C) Information applies to the solvent.
Density:	1.10 g/cm3	( 20 °C)
Relative density:	1.10	( 20 °C)
Bulk density:		not applicable
Viscosity, dynamic:	163.2 mPa.s	( 20 °C)
	56.59 mPa.s	( 40 °C)
Solubility in water:		miscible
Molar mass:	320.4 g/mol	

### 10. Stability and Reactivity

#### Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme temperatures. Avoid prolonged exposure to extreme heat. Avoid contamination. Avoid electro-static discharge. Avoid prolonged storage.

#### Substances to avoid:

oxidizing agents, reducing agents

#### Hazardous reactions:

The product is chemically stable.

#### Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

#### Thermal decomposition:

Possible thermal decomposition products:

carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons

Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

#### Corrosion to metals:

Corrosive effect on: mild steel brass

#### Oxidizing properties:

Not an oxidizer.

### 11. Toxicological information

#### Acute toxicity

##### Oral:

Type of value: LD50

Species: rat (male/female)

Value: > 2,000 mg/kg

##### Inhalation:

Type of value: LC50

Species: rat

Value: > 5.5 mg/l

Exposition time: 4 h

##### Dermal:

Type of value: LD50

# Safety Data Sheet

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Species: rabbit (male/female)  
Value: > 5,000 mg/kg

### Irritation / corrosion

#### Skin:

Species: rabbit  
Result: non-irritant  
Method: Primary skin irritation test

#### Eye:

Species: rabbit  
Result: non-irritant

#### Sensitization:

Skin sensitization test  
Species: guinea pig  
Result: Caused skin sensitization in animal studies.

### Genetic toxicity

Information on: imazapyr

No mutagenic effect was found in various tests with microorganisms and mammals.

### Carcinogenicity

Information on: imazapyr

In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

### Reproductive toxicity

Information on: imazapyr

The results of animal studies gave no indication of a fertility impairing effect.

### Development:

Information on: imazapyr

No indications of a developmental toxic / teratogenic effect were seen in animal studies.

---

## 12. Ecological Information

### Fish

Information on: imazapyr

Acute:

*Oncorhynchus mykiss*/LC50 (96 h): > 100 mg/l

### Aquatic invertebrates

Information on: imazapyr

Acute:

*Daphnia magna*/EC50 (48 h): > 100 mg/l

### Aquatic plants

# Safety Data Sheet

## CHOPPER GEN 2

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(30335622/SDS\_CPA\_US/EN)

*Information on: imazapyr*  
*Toxicity to aquatic plants:*  
*green algae/EC50: 71 mg/l*  
-----

### Non-Mammals

*Information on: imazapyr*  
*Other terrestrial non-mammals:*  
*mallard duck/LC50: > 5,000 ppm*  
*With high probability not acutely harmful to terrestrial organisms.*  
*Honey bee/LD50: > 100 ug/bee*  
*With high probability not acutely harmful to terrestrial organisms.*  
-----

### Degradability / Persistence Biological / Abiological Degradation

Evaluation: Not readily biodegradable (by OECD criteria).

### Other adverse effects:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

---

## 13. Disposal considerations

### Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

### RCRA:

This product is not regulated by RCRA.

---

## 14. Transport Information

Reference Bill of Lading

---

## 15. Regulatory Information

### Federal Regulations

#### Registration status:

Chemical TSCA, US blocked / not listed

Crop Protection TSCA, US released / exempt

**OSHA hazard category:** Chronic target organ effects reported; ACGIH TLV established

**EPCRA 311/312 (Hazard categories):**

Acute; Chronic

# Safety Data Sheet

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### State regulations

#### **CA Prop. 65:**

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

---

## 16. Other Information

**Refer to product label for EPA registration number.**

Recommended use: herbicide

BASF supports worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

---

### **Local Contact Information**

Product Stewardship  
919 547-2000

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY BASF HEREUNDER ARE GIVEN GRATIS AND BASF ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

END OF DATA SHEET

# BARAGA COUNTY FOREST INDUSTRY

## LARGER INDUSTRIES

Besse Forest Products  
Celotex Corporation  
Champion International Corporation  
Mead Corporation  
Shelter Bay Forests  
Erickson Lumber

## PUBLIC AGENCIES

Craig Lake State Park  
Michigan DNR  
Michigan Technological University  
Ottawa National Forest

*Area of special note is the L'Anse and Keweenaw Bay Indian Reservations and Communities.  
Listing indicates land ownership and/or an office location.*

## **SMALLER INDUSTRIES, LOGGERS, TRUCKERS, BROKERS, DEALERS, CONSULTANTS**

Greg Alessandroni	Mayes & Stenvig Timber Harvesting
All-Wood	Michigan State Industries
B & B Logging	Cliff Nankervis
Baraga Land & Timber	Newland Logging
Borgen Trucking (Dale)	Dave Newman
Richard Brouchoud Logging	Ollila Trucking (Clyde)
Robert Cadeau Logging	Pequaming Logging (R.Heikkinen)
CDC Logging	Perrow Trucking (Dale)
Paul Clisch	Ward Perrow
Tom Clisch Logging	Quality First Forest Products
Collins Forest Products	Rice Trucking (Lee)
D & L Logging	Risku Trucking (Ron)
E & M Contracting	Risku Brothers Forest Products
Four C's Logging	R.D. Kent Trucking
Wilbert Franti	Ruona (Bucky)
GDE Logging	S.K. Wood Products
Gerou Forest Products	Santti Brothers
Ted Gearu	Pioneer Logging & Trucking
Geroux Logging	Silver River Logging & Trucking
Rodney Haanpaa Logging	Specialty Wood Products
Ray Hansen	Adrian Stein
Jack Hornick	Charles Takalo
Huron Bay Forest Industries	The End Sawmill
David & Robert Janda	Tolonen Contracting
Stan Johns	Robert Tolonen Logging
Kayramo Trucking (William, Sr.)	John Trenier Logging
William Kayramo, Jr.	Turpeinen Brothers
Tom Kelley	John Vuk & Son
Ketola & Sons Trucking	Wedin Sawmill
Krueger Trucking (Carl)	Westman Forest Products
L & D Perry Logging	Gary Willis
Le Claire (Paul) Logging	Witz Trucking
Lehto Loggin	Younggren Farm & Forest (Francis)
M & S Logging	Robert Younggren Logging

Assembled by Michigan State University Extension, Upper Peninsula Regional Forestry office for use by County Commissioners, planners, and others interested in the forest industry. While considerable effort was made to prepare this list, it is not represented as complete, entirely accurate, or an endorsement by MSU of any particular individual or company. The intent is to demonstrate the importance of forestry and forest industry in each county of the Upper Peninsula. Sources of data are MSU Sustainable Forestry Education program and Michigan DNR publications: Burcham, Vi (editor). 1996. "Wood Products in Michigan: A Directory of Mills & Manufacturers" and Burcham, Vi (editor). 1992. "Michigan Forest Products: Producers, Truckers, Brokers, and Dealers". DNR directory information is also available on the Internet at(<http://www.dnr.state.mi.us/dnr/main.htm>). There have most likely been additions and deletions to these lists since the data sources were last updated.

## **Plum Creek's Upper Peninsula Forest**

Plum Creek is the largest and most geographically diverse private landowner in the nation, with more than 8 million acres in major timber producing regions of the United States. Plum Creek owns 650,000 acres of timberland in Michigan's Upper Peninsula. These lands are managed under the rigorous guidelines of the Sustainable Forestry Initiative (SFI). The comprehensive system of principles and objectives that integrate the perpetual growing and harvesting of trees with the protection of wildlife, plants, soil, water and air quality.

Most of Plum Creek's forestland in the Upper Peninsula are listed under the Commercial Forest Reserve Act and are open to the public for hunting and fishing. As you travel through and enjoy these lands, please observe the following rules:

1. Littering and dumping are prohibited. Please carry out what you carry in.
2. The use of nails, screw-in steps, or any device which penetrates the bark of trees to secure a hunting blind or tree stand is prohibited.
3. All hunting blinds and tree stands must be removed from Plum Creek property no later than the day following the close of the last deer season.
4. Cutting trees to create shooting lanes, ORV trails or camping sites is not permitted.
5. ORV's are allowed on existing roads except where specifically prohibited. However, construction of new ORV trails is not permitted.

Please feel free to contact one of Plum Creek's foresters at either of our administrative offices if you have any questions.

Escanaba Office  
2831 N. Lincoln Rd  
Escanaba, MI 49829  
(906) 789-9076

L'Anse Office  
15800 Mead Road  
L'Anse, MI 49946  
(906) 524-2040

Publishing Paper Division

June 9, 1999

Route 2 Box 672  
L'Anse, Michigan 49946  
906-524-6513  
Fax: 906-524-6899

Tricia Beaver  
Keweenaw Bay Indian Community  
Baraga, MI 49908

Dear Tricia:

Sometime during the time period between June 14 and June 25, Mead will be doing a release spray on three of our plantations within the tribal boundaries. Enclosed are copies of plat book pages and of Mead type maps describing the areas to be sprayed. I have also enclosed the MSDS for the release chemical, which is Velpar L, and Garlon 4.

Velpar L releases the plantation from grass, raspberry, cherry, and aspen competition. There is a slight odor at initial application, but this odor does not linger. As soon as this herbicide dries on the plants it is safe to enter the area. All landowners within one quarter mile of the affected area have been notified. There are six different parts of this plantation, and all these areas have been sprayed before. This will be sprayed by a helicopter.

Garlon 4 will be sprayed by a contractor using backpack spray units. Individual stems are sprayed, with the main target being the stump sprout competition.

If you have any questions, please give me a call. Please refer to plantation # N059 (Velpar L), N037 (Garlon 4), and N048 (Garlon 4).

Sincerely,



Stephen R. Nelson  
District Regeneration Forester  
Mead Paper

20

SKANEE RD.

29

VELPARK

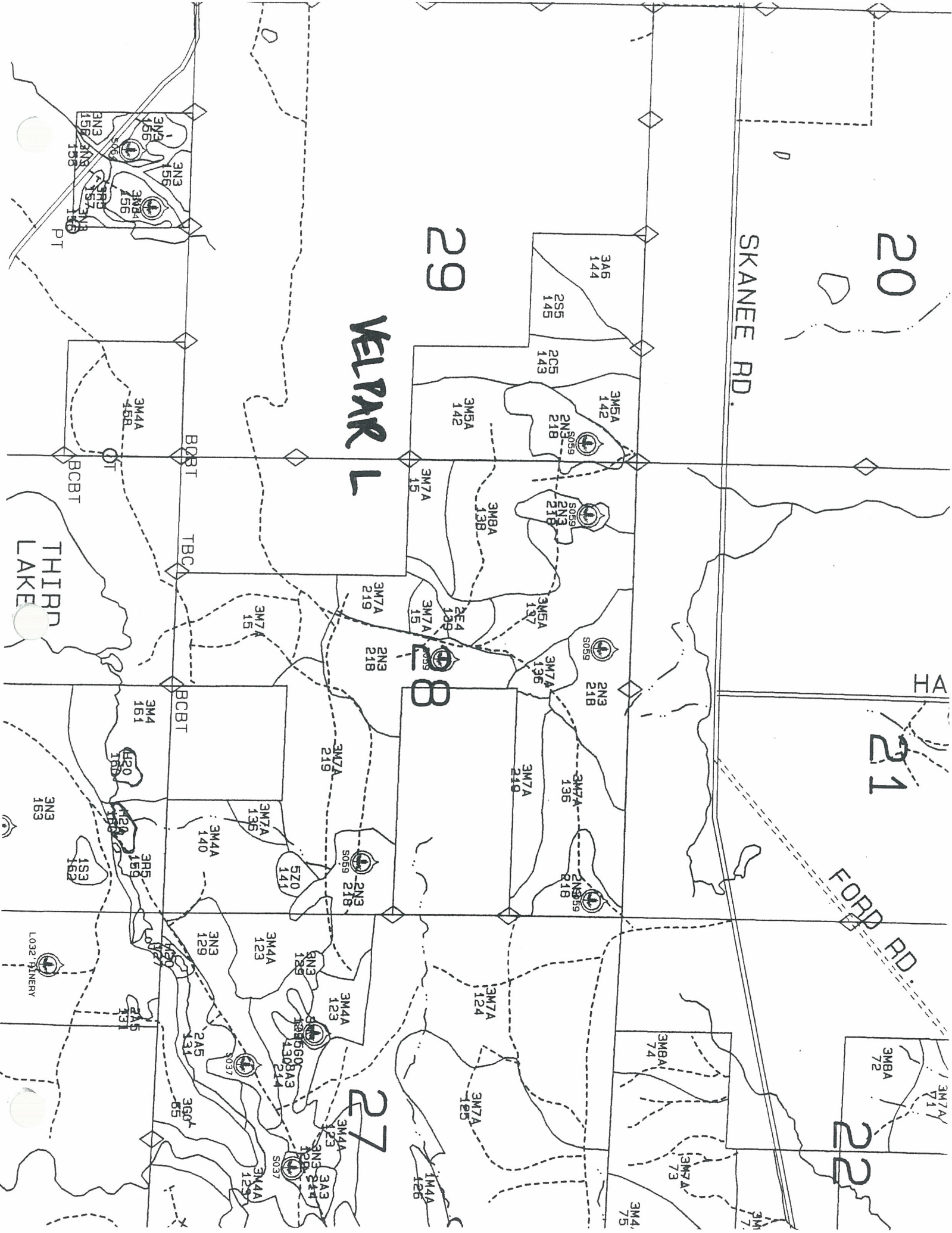
21

FORD RD.

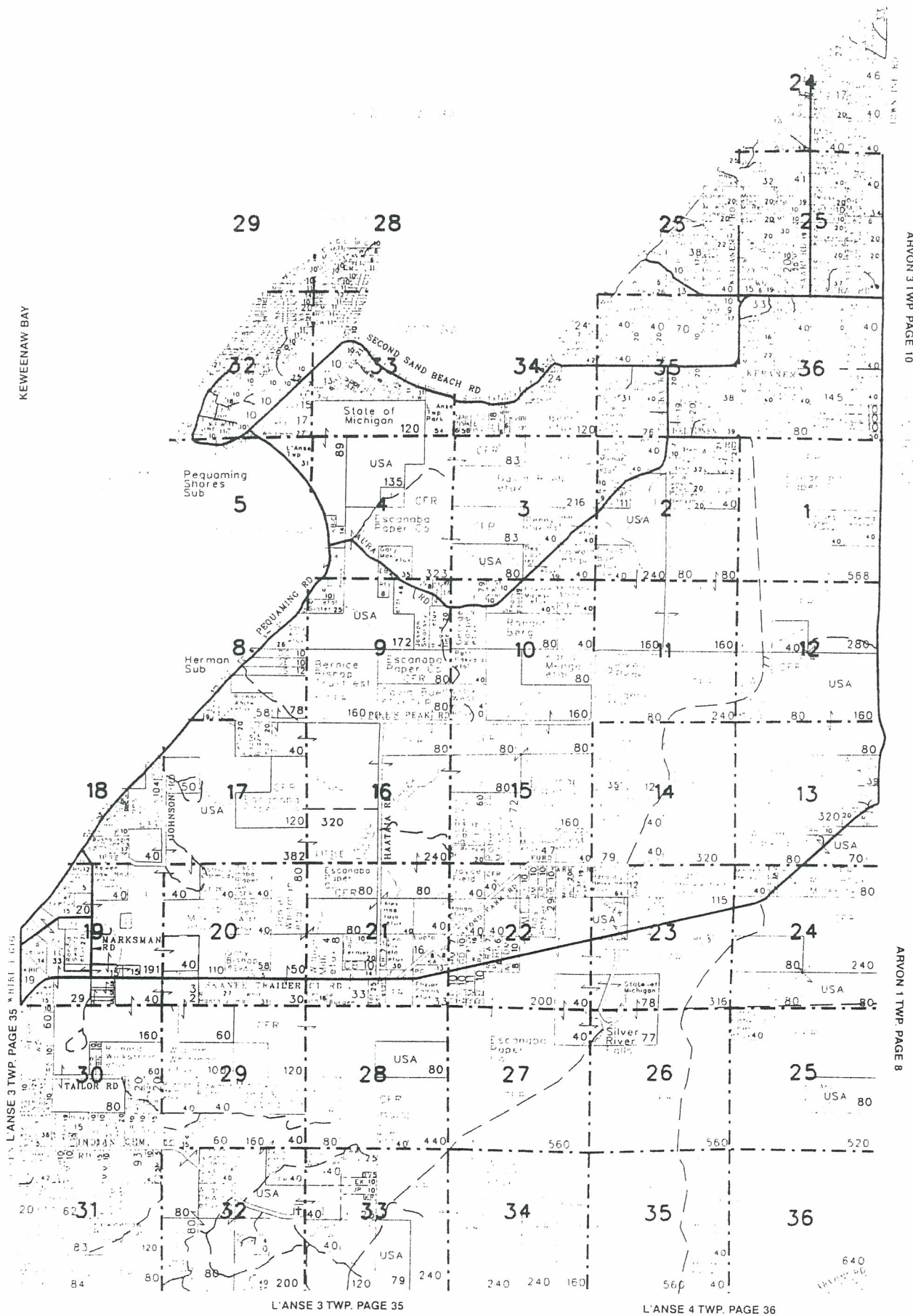
22

27

28



(Landowners)  
KEWEENAW BAY





Du Pont Agricultural Products

M0000056



Revised 16-DEC-1993

Printed 15-FEB-1995

## "Velpar" L Herbicide

### CHEMICAL PRODUCT/COMPANY IDENTIFICATION

#### Material Identification

"Velpar" is a registered trademark of DuPont.

Corporate MSDS Number DU003032

#### Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont  
1007 MARKET STREET  
WILMINGTON, DE 19898

#### PHONE NUMBERS

Product Information	1-800-441-7515
Transport Emergency	CHEMTREC 1-800-424-9300
Medical Emergency	1-800-441-3637

### COMPOSITION/INFORMATION ON INGREDIENTS

Components Material	CAS Number	%
------------------------	------------	---

*HEXAZINONE	51235-04-2	25
-------------	------------	----

(3-CYCLOHEXYL-6-(DIMETHYLAMINO)-1-METHYL-  
1,3,5-TRIAZINE-2,4(1H,3H)-DIONE)

INERT INGREDIENTS

75

(INCLUDES PERCENTAGES OF THE FOLLOWING:)

ETHANOL

64-17-5 40-45

\* Regulated as a Toxic Chemical under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

(Continued)

## HAZARDS IDENTIFICATION

### Potential Health Effects

DANGER! Causes eye damage. Corrosive, causes irreversible eye damage. Harmful if swallowed.

#### ANIMAL DATA:

ORAL LD50 - (rat) 6,887 mg/kg or > 5,000 mg/kg. Very low toxicity by ingestion.

DERMAL LD50 - >7,500 mg/kg (rabbit). Slightly toxic by contact.

Not classified as a primary skin irritant in tests on rabbits. Produced no sensitization and only mild transient irritation in the guinea pig.

EYE - Direct contact with the liquid concentrate produced persistent mild to severe corneal cloudiness with moderate to severe conjunctivitis and moderate iritis in unwashed rabbit eyes. Considered a severe eye irritant.

#### CHRONIC STUDIES - HEXAZINONE

Oral (rat): In a 2-year feeding study with the 90% powder, the no-observable-effect level was 200 ppm a.i.; nutritional and body weight effects were seen in females at 1,000 ppm a.i. and in both sexes at 2,500 ppm a.i. Biochemical effects were noted in both sexes at 2,500 ppm a.i.

Oral (mouse): In a 2-year feeding study with technical material, the no-observable-effect level (NOEL) was 200 ppm; Decreased body weight gain was observed in both sexes at 2,500 ppm and 10,000 ppm. This effect was severe at 10,000 ppm, the highest dose tested. Non-neoplastic liver effects were noted in males at 2,500 ppm and in both sexes at 10,000 ppm. Based on a recent pathology review, hyperplastic liver nodules diagnosed at 10,000 ppm when this study was initially conducted have been reclassified as liver adenomas. This effect was only significant among female mice in this dose group. This change reflects the current scientific consensus regarding the classification of this benign lesion in the mouse liver.

Oral (dog): In a 1-year feeding study with technical material, the NOEL was 200 ppm. Reduced food consumption and body weight gains were significant at the high dose, 6,000 ppm. These nutritional effects were associated with mild but reversible changes in hematological parameters at the high dose. Increased liver weights and other non-neoplastic liver effects as indicated by histopathology and changes in clinical chemical parameters were observed at

(Continued)

## HAZARDS IDENTIFICATION (Continued)

1,500 and/or 6,000 ppm.

Dermal (rabbit): A 21-day dermal study was conducted in rabbits with technical hexazinone. There were no compound-related effects observed. This included the high-dose group in which 1,000 mg/kg was dermally applied for 6 hours/day throughout the study.

### OTHER STUDIES:

REPRODUCTION (Rat) - In a 3-generation, 3-litter study with 90% powder, no adverse reproduction or lactation effects were seen at any level; slightly depressed average weanling weights were noted in the second and third litters at the high dose, 2,500 ppm. A second rat reproduction study (2-generation, 3-litter study) was conducted at dietary doses from 200 to 5,000 ppm. There were no adverse effects on fertility. The NOEL was 200 ppm. Decreased food consumption, parental body weight gain and decreased offspring weights were observed at the higher doses.

TERATOGENICITY - Not teratogenic or embryo-fetal toxic to rats by dietary administration at levels as high as 5,000 ppm, the highest dose tested. Administration to rats by oral intubation resulted in a NOEL for maternal and fetal effects of 100 mg/kg body wt./day. Maternal toxicity (reduced food consumption and lower body weights) was observed at 400 and 900 mg/kg. Lower fetal weights and indications of general delayed development associated with maternal toxicity were also observed at these doses. When hexazinone was administered to rabbits via oral intubation, there were no teratogenic or embryo-fetal toxic effects at the highest dose tested, 125 mg/kg/day. Only a transient reduction in maternal food consumption was observed at the high dose. The maternal and fetal NOELs are considered to be 125 mg/kg.

MUTAGENICITY - Not mutagenic in Ames bacterial assay, Chinese hamster ovary cell point mutation assay, or rat liver DNA repair assay; positive in the in vitro Chinese hamster ovary cell cytogenetic assay but negative in the in vivo rat bone marrow cytogenetic assay.

HUMAN HEALTH EFFECTS OF OVEREXPOSURE TO HEXAZINONE: Overexposure to hexazinone by eye contact may initially include eye irritation with discomfort, tearing, or blurring of vision.

Ingestion may include abnormal liver function as detected by laboratory tests.

Significant skin permeation, and systemic toxicity after contact appears unlikely. Individuals with preexisting diseases of the liver may have increased susceptibility to

(Continued)

---

## HAZARDS IDENTIFICATION(Continued)

the toxicity of excessive exposures.

### HUMAN HEALTH EFFECTS OF OVEREXPOSURE TO ETHANOL:

The principal manifestation of ethanol poisoning is central nervous system depression.

Skin contact may initially include defatting of the skin resulting in irritation with discomfort or rash; or allergic skin rashes.

Eye contact may initially include eye irritation with discomfort, tearing, or blurring of vision.

Inhalation may initially include irritation of the upper respiratory passages, with coughing and discomfort.

Ingestion may initially include temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; reproductive effects with risk to the unborn child; temporary nervous system effects such as muscular weakness and incoordination; gastrointestinal tract irritation; or nonspecific discomfort, such as nausea, headache, or weakness.

Higher exposures may lead to reduced white blood cell production; temporarily reduced fertility in females and males; temporary elevation of blood pressure; degeneration of the heart muscles; abnormal liver function as detected by laboratory tests; or abnormal liver function with nausea or vomiting, reduced appetite, or abnormal pain.

Individuals with preexisting diseases of the liver, central nervous system, gastrointestinal tract, or reproductive organs may have increased susceptibility to the toxicity of excessive exposures.

---

### Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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---

## FIRST AID MEASURES

### First Aid

#### INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

#### SKIN CONTACT

(Continued)

---

**FIRST AID MEASURES**(Continued)

In case of contact, immediately wash skin with soap and water.  
Wash contaminated clothing before reuse.

**EYE CONTACT**

In case of contact, immediately flush eyes with plenty of water  
for at least 15 minutes. Call a physician.

**INGESTION**

No specific intervention is indicated as compound is not likely to  
be hazardous by ingestion. Consult a physician if necessary.

---

**FIRE FIGHTING MEASURES****Flammable Properties**

Flash Point	23-25 C (73-77 F)
Method	Closed Cup

Flammable liquid. Vapor forms explosive mixture with air.  
Heating can release vapors which can be ignited.

**Extinguishing Media**

Water Spray, Foam, Dry Chemical, CO2.

**Fire Fighting Instructions**

Wear self-contained breathing apparatus. Use water spray. Cool  
tank/container with water spray.

If area is heavily exposed to fire and if conditions permit,  
let fire burn itself out since water may increase the  
contamination hazard.

---

**ACCIDENTAL RELEASE MEASURES****Safeguards (Personnel)**

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL)  
sections before proceeding with clean-up. Use appropriate  
PERSONAL PROTECTIVE EQUIPMENT during clean-up.

**Initial Containment**

Dike spill. Prevent material from entering sewers, waterways, or  
low areas.

**Spill Clean Up**

Soak up with sawdust, sand, oil dry or other absorbent material.  
Shovel or sweep up.

(Continued)

---

## HANDLING AND STORAGE

### Handling (Personnel)

Do not get on clothing. Do not get in eyes. Avoid breathing vapors or mist. Avoid contact with skin. Wash thoroughly after handling. Wash clothing after use. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

---

### Handling (Physical Aspects)

Keep away from heat, sparks and flames.

---

### Storage

Store in a well ventilated place. Keep container tightly closed.

Do not subject product to temperatures below 32 deg F.

---

---

## EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

---

### Personal Protective Equipment

Always follow label instructions when using this product.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

---

### Exposure Guidelines

#### Applicable Exposure Limits

HEXAZINONE

PEL (OSHA)

None Established

TLV (ACGIH)

None Established

(Continued)

---

## EXPOSURE CONTROLS/PERSONAL PROTECTION(Continued)

---

AEL * (Du Pont)	10 mg/m3, 8 Hr. TWA
ETHANOL	
PEL (OSHA)	1,000 ppm, 1,900 mg/m3, 8 Hr. TWA
TLV (ACGIH)	1,000 ppm, 1,880 mg/m3, 8 Hr. TWA
AEL * (Du Pont)	1000 ppm, 8 & 12 Hr. TWA

---

\* AEL is Du Pont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

---

## PHYSICAL AND CHEMICAL PROPERTIES

---

Physical Data	
Vapor Pressure	33 mm Hg @ 25 C (77 F) *
Solubility in Water	Dispersible
Odor	Alcoholic
Form	Liquid
Color	Light yellow
Specific Gravity	0.9776

---

## STABILITY AND REACTIVITY

---

**Chemical Stability**  
Stable at normal temperatures and storage conditions.

---

**Incompatibility with Other Materials**  
Incompatible with strong acids or bases (slowly hydrolyzes).

---

**Polymerization**  
Polymerization will not occur.

---

## ECOLOGICAL INFORMATION

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**Ecotoxicological Information**  
Aquatic Toxicity

This formulation is considered slightly toxic.

96 hour LC50, bluegill sunfish: > 1,000 mg/L

---

## DISPOSAL CONSIDERATIONS

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**Waste Disposal**  
Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA regional office for guidance.

---

(Continued)

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## TRANSPORTATION INFORMATION

---

### # Shipping Information

DOT/IMO	
Proper Shipping Name	ETHANOL SOLUTION
Hazard Class	3
UN No.	UN 1170
Special Information	FLASH POINT: 23 deg C (74 deg F)
Packing Group	III

---

## REGULATORY INFORMATION

---

### U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute	: Yes
Chronic	: No
Fire	: Yes
Reactivity	: No
Pressure	: No

---

## OTHER INFORMATION

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### NFPA, NPCA-HMIS

NFPA Rating	
Health	2
Flammability	3
Reactivity	0

### NPCA-HMIS Rating

Health	2
Flammability	3
Reactivity	0

Personal Protection rating to be supplied by user depending on use conditions.

---

### Additional Information

This product is registered under EPA/FIFRA Regulations.  
The EPA Reg. No. is 352-392.

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

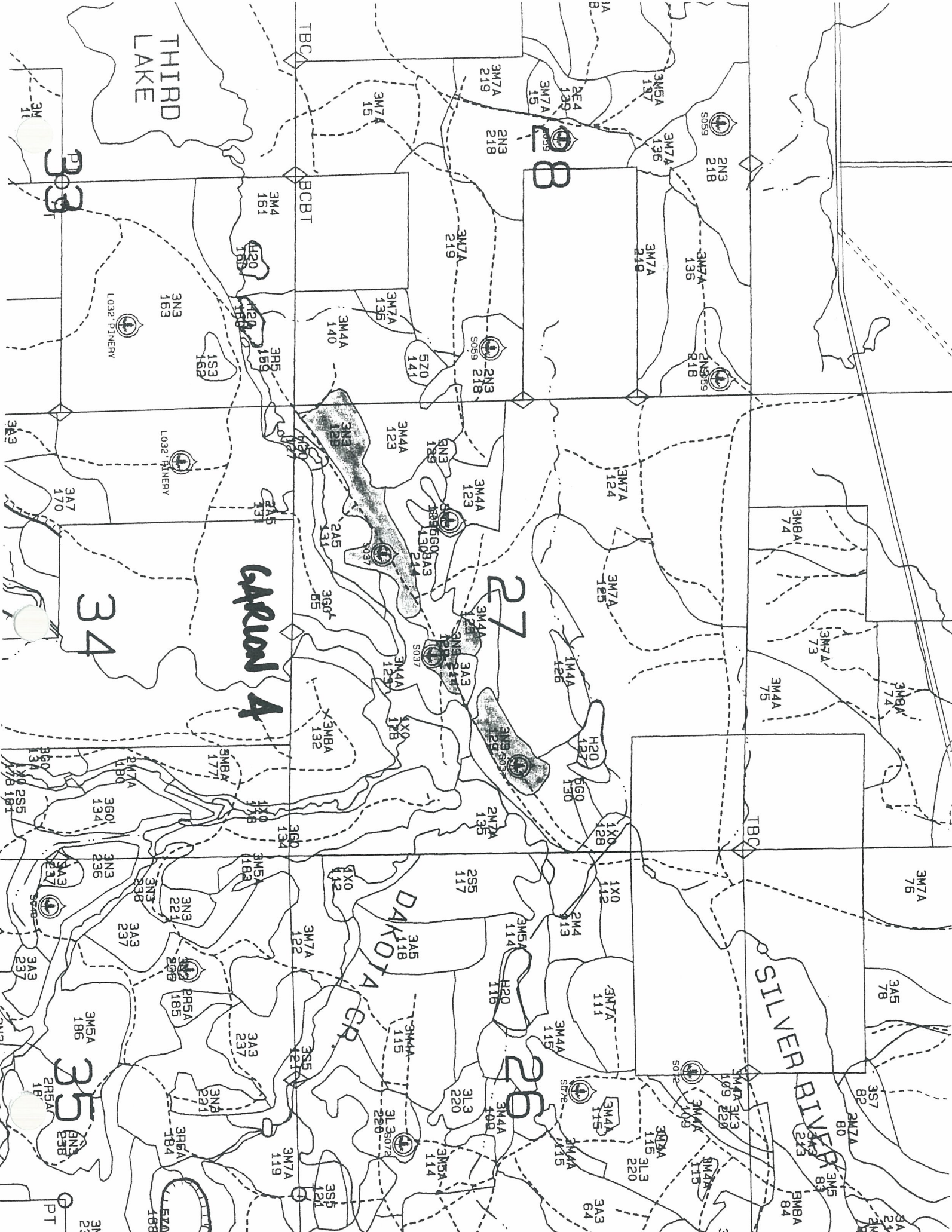
Responsibility for MSDS	Du Pont
Address	Agricultural Products
	Wilmington DE 19898
Telephone	800-441-7515

---

# Indicates updated section.

---

End of MSDS



A topographic map showing a mountainous area with a grid system. The map includes contour lines, elevation points, and various labels. A large, dark, irregularly shaped area is shaded in the upper right quadrant, possibly representing a forest or a specific land use. The map is divided into sections by a grid of lines. Labels include 'T51N, R32W' in the upper right, 'Garrod 4' in the center, and 'ARVON RD.' at the bottom. Other labels include '3M4A 32', '3M4A 34', '3M4A 33', '3M4A 28', '3M4A 27', '3M4A 26', '3M4A 25', '3M4A 24', '3M4A 23', '3M4A 22', '3M4A 21', '3M4A 20', '3M4A 19', '3M4A 18', '3M4A 17', '3M4A 16', '3M4A 15', '3M4A 14', '3M4A 13', '3M4A 12', '3M4A 11', '3M4A 10', '3M4A 9', '3M4A 8', '3M4A 7', '3M4A 6', '3M4A 5', '3M4A 4', '3M4A 3', '3M4A 2', '3M4A 1', '3M4A 0', '3M4A -1', '3M4A -2', '3M4A -3', '3M4A -4', '3M4A -5', '3M4A -6', '3M4A -7', '3M4A -8', '3M4A -9', '3M4A -10', '3M4A -11', '3M4A -12', '3M4A -13', '3M4A -14', '3M4A -15', '3M4A -16', '3M4A -17', '3M4A -18', '3M4A -19', '3M4A -20', '3M4A -21', '3M4A -22', '3M4A -23', '3M4A -24', '3M4A -25', '3M4A -26', '3M4A -27', '3M4A -28', '3M4A -29', '3M4A -30', '3M4A -31', '3M4A -32', '3M4A -33', '3M4A -34', '3M4A -35', '3M4A -36', '3M4A -37', '3M4A -38', '3M4A -39', '3M4A -40', '3M4A -41', '3M4A -42', '3M4A -43', '3M4A -44', '3M4A -45', '3M4A -46', '3M4A -47', '3M4A -48', '3M4A -49', '3M4A -50', '3M4A -51', '3M4A -52', '3M4A -53', '3M4A -54', '3M4A -55', '3M4A -56', '3M4A -57', '3M4A -58', '3M4A -59', '3M4A -60', '3M4A -61', '3M4A -62', '3M4A -63', '3M4A -64', '3M4A -65', '3M4A -66', '3M4A -67', '3M4A -68', '3M4A -69', '3M4A -70', '3M4A -71', '3M4A -72', '3M4A -73', '3M4A -74', '3M4A -75', '3M4A -76', '3M4A -77', '3M4A -78', '3M4A -79', '3M4A -80', '3M4A -81', '3M4A -82', '3M4A -83', '3M4A -84', '3M4A -85', '3M4A -86', '3M4A -87', '3M4A -88', '3M4A -89', '3M4A -90', '3M4A -91', '3M4A -92', '3M4A -93', '3M4A -94', '3M4A -95', '3M4A -96', '3M4A -97', '3M4A -98', '3M4A -99'. The map also shows a river or stream flowing through the lower right, and a road labeled 'ARVON RD.' at the bottom. The grid lines are labeled with numbers 1 through 10, and letters A through Z. The map is oriented with North at the top.

[illegible][illegible][illegible][illegible][illegible]

A topographic map showing a mountainous region. The map includes contour lines, roads, and various elevation points. Handwritten labels include "T51N, R32W" in the upper right, "Garrod 4" in the center, and large numbers "7", "8", and "9" along the left edge. A road labeled "ARVON RD." runs diagonally across the lower right. Other features include a shaded mountain peak, several small circles and squares, and numerous alphanumeric codes like "3M4A", "3M7A", "3G0", etc., scattered throughout the terrain.

[illegible]

**T-50-N**

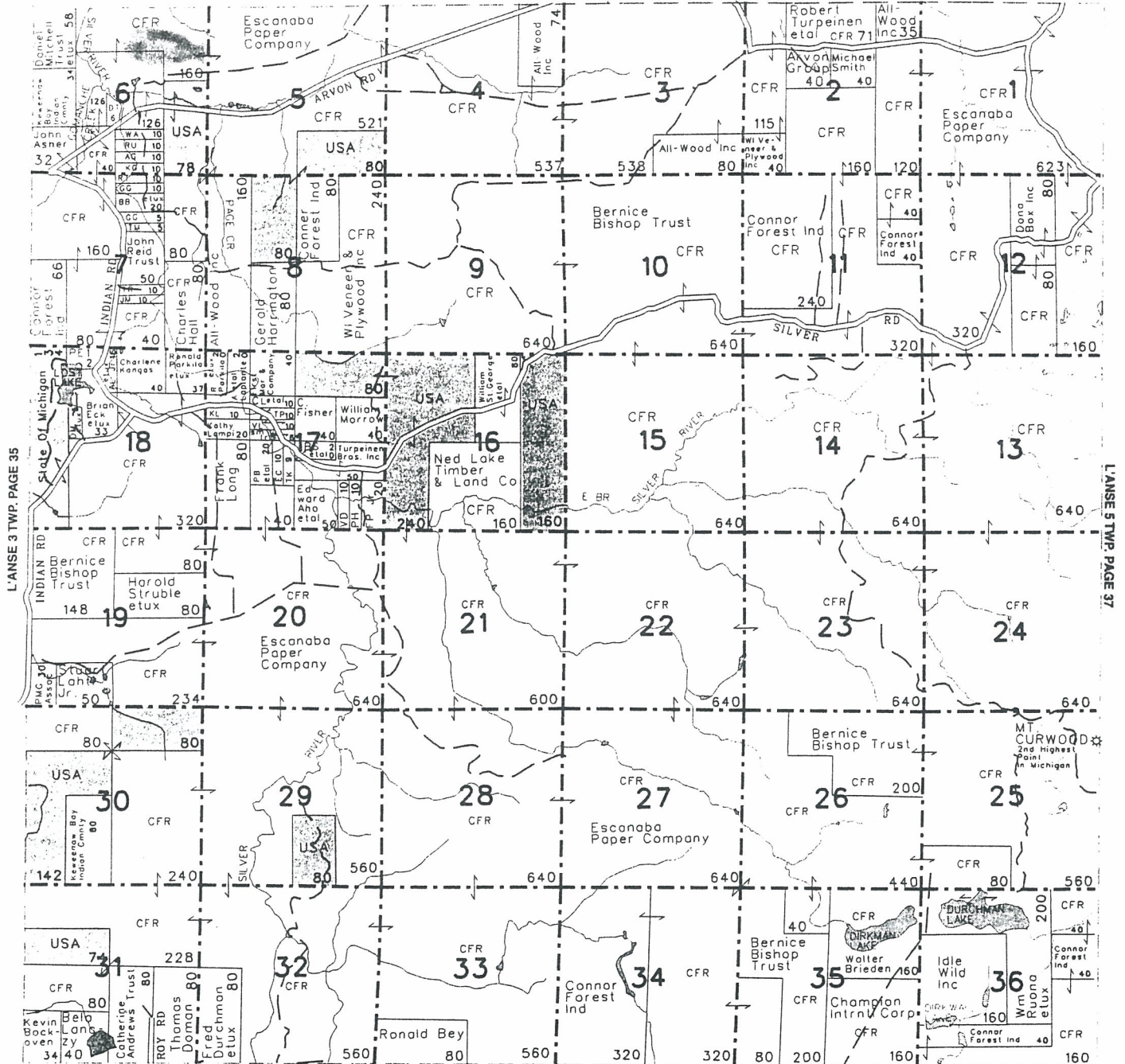
**L'ANSE 4 PLAT**

**R-32-W**

(Landowners)

L'ANSE 7 TWP. PAGE 39

ARVON 1 TWP. PAGE 8



L'ANSE 2 TWP. PAGE 34

# **TURPEINEN BROS., INC.**

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&

TOTAL TREE CHIPPING

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**Robert Erickson, President**

U.S. 41 - L'Anse, Michigan

7:00 a.m. - 5:00 p.m. WEEKDAYS

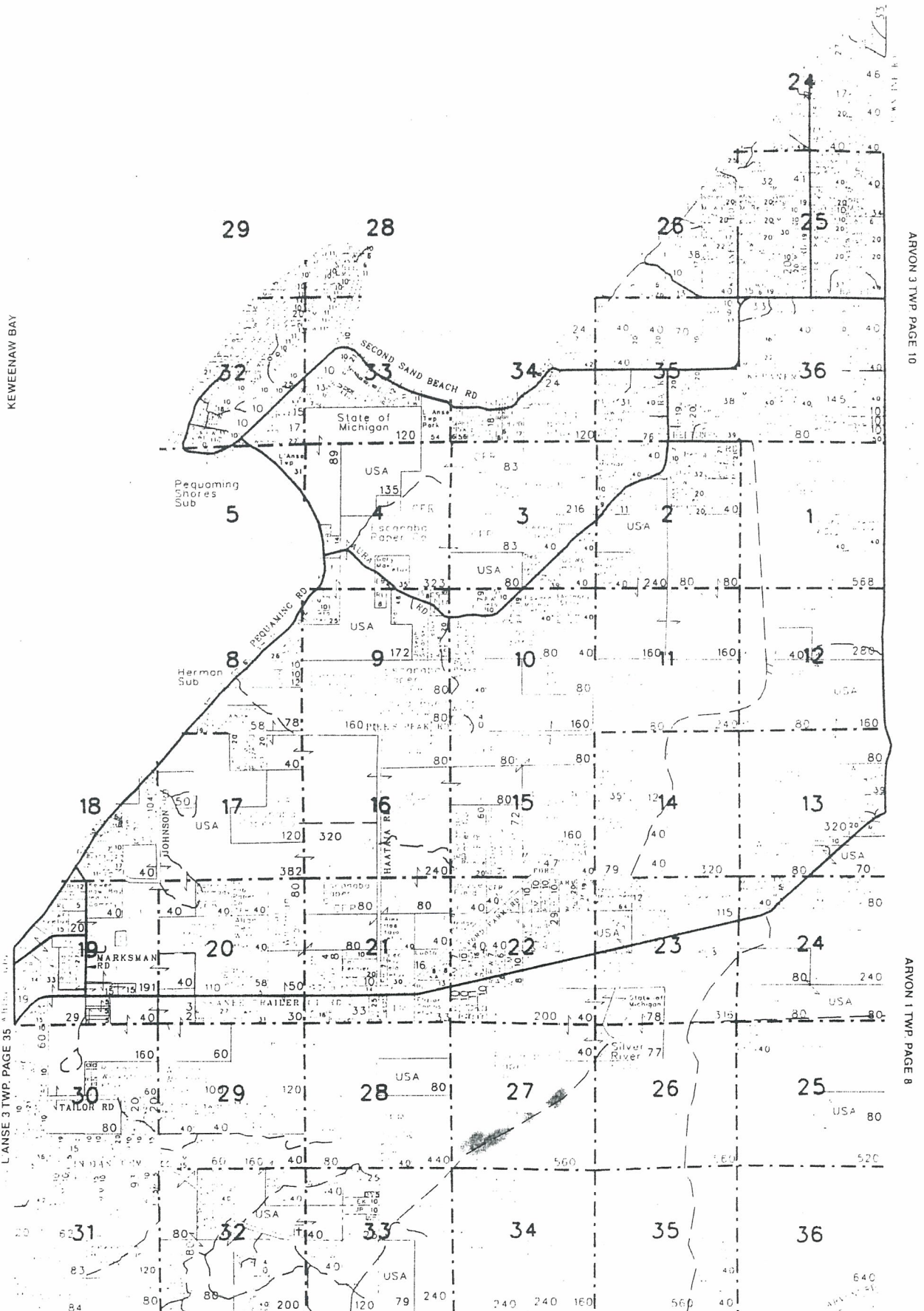
9:00 a.m. - 3:00 p.m. SATURDAY



See Page 56 For Additional Names.

© Farm & Home Publishers, Ltd.

(Landowners)  
KEWEENAW BAY



# Material Safety Data Sheet



Emergency Phone: 517-636-4400  
General Phone: 1-800-352-6776

EPA Reg. Number: 62719-40  
Effective Date: July 16, 1992  
Product Code: 38322  
MSDS Number: 001314  
DowElanco • Indianapolis, IN 46268

## GARLON\* 4 Herbicide

### 1. INGREDIENTS: (% w/w, unless otherwise noted)

Triclopyr ((3,5,6-trichloro-2-pyridinyl)  
oxy) acetic acid, butoxy ethyl ester  
CAS# 064700-56-7 .....61.6%  
Other ingredients: .....38.4%  
Kerosene . . . CAS# 008008-20-6  
Proprietary ingredients

This document is prepared pursuant to the OSHA  
Hazard Communication Standard (29 CFR  
1910.1200). In addition, other substances not  
'Hazardous' per this OSHA Standard may be listed.  
Where proprietary ingredient shows, the identity may  
be made available as provided in this standard.

### 2. PHYSICAL DATA:

**BOILING POINT:** >302°F, 150°C initial  
**VAP. PRESS:** 0.1 mm @ 37.8°C (kerosene)  
**VAP. DENSITY:** >1  
**SOL. IN WATER:** Emulsifies  
**SP. GRAVITY:** 1.08  
**APPEARANCE:** Amber liquid.  
**ODOR:** Not available.

### 3. FIRE AND EXPLOSION HAZARD DATA:

**FLASH POINT:** 147°F, 64°C  
**METHOD USED:** TCC  
**FLAMMABLE LIMITS:**  
LFL: Not determined  
UFL: Not determined  
**EXTINGUISHING MEDIA:** Water fog, foam, CO<sub>2</sub>, and  
dry chemical.  
**FIRE & EXPLOSION HAZARDS:** Combustible.  
**FIRE-FIGHTING EQUIPMENT:** Use positive pressure  
self-contained breathing apparatus.

### 4. REACTIVITY DATA:

**STABILITY:** (CONDITIONS TO AVOID) Combustible.  
Avoid sources of ignition if temperature is near or  
above flash point.  
**INCOMPATIBILITY:** (SPECIFIC MATERIALS TO  
AVOID) Acid, base, and oxidizing material.

**HAZARDOUS DECOMPOSITION PRODUCTS:**  
Nitrogen oxides, hydrogen chloride, and phosgene  
may result under fire conditions.

**HAZARDOUS POLYMERIZATION:** Will not occur.

### 5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Dike large  
spills. Keep out of streams and domestic water sup-  
plies. Absorb small spills in inert material such as  
sand.

**DISPOSAL METHOD:** In case of large spills, contact  
The Dow Chemical Company. Bury clean-up material  
from small spills in an approved landfill in accordance  
with applicable local, state, and federal regulations.

### 6. HEALTH HAZARD DATA:

**EYE:** May cause slight transient (temporary) eye irrita-  
tion.

**SKIN CONTACT:** Prolonged or repeated exposure  
may cause skin irritation. Prolonged or frequently-  
repeated skin contact may cause allergic reactions in  
some individuals. With the dilute mix, no allergic skin  
reaction is expected.

**SKIN ABSORPTION:** A single prolonged exposure is  
not likely to result in the material being absorbed  
through skin in harmful amounts. The LD<sub>50</sub> for skin  
absorption in rabbits is >2000 mg/kg. Repeated skin  
exposure may result in absorption of harmful amounts.

**INGESTION:** Single dose oral toxicity is low. The oral  
LD<sub>50</sub> for male rats is 1581 mg/kg and for females  
1338 mg/kg. Small amounts swallowed incidental to  
normal handling operations are not likely to cause  
injury; swallowing amounts larger than that may cause  
injury. If aspirated (liquid enters the lung), may cause  
lung damage or even death due to chemical pneumo-  
nia.

**INHALATION:** Excessive exposure may cause irrita-  
tion to upper respiratory tract. Signs and symptoms of  
excessive exposure may be central nervous system  
effects (due to kerosene).

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:**  
Repeated excessive exposures may cause liver, kid-  
ney or blood effects.

**CANCER INFORMATION:** Did not cause cancer in  
long-term animal studies.

**TERATOLOGY (BIRTH DEFECTS):** Birth defects are  
unlikely. Exposures having no effect on the mother  
should have no effect on the fetus. Did not cause birth

# Material Safety Data Sheet



## GARLON\* 4 Herbicide

Emergency Phone: 517-636-4400  
General Phone: 1-800-352-6776

EPA Reg. Number: 62719-40  
Effective Date: July 16, 1992  
Product Code: 38322  
MSDS Number: 001314  
DowElanco • Indianapolis, IN 46268

defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.

**REPRODUCTIVE EFFECTS:** The active ingredient in this formulation has been shown in animals not to interfere with reproduction.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):** Results of in-vitro ("test tube") mutagenicity tests have been negative. Results of mutagenicity tests in animals have been negative.

### 7. FIRST AID:

**EYES:** Flush eyes with plenty of water.

**SKIN:** Wash off in flowing water or shower. Get medical attention if irritation persists.

**INGESTION:** Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

**INHALATION:** Remove to fresh air if effects occur. Consult a physician.

**NOTE TO PHYSICIAN:** The decision of whether to induce vomiting or not should be made by an attending physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient. Repeated excessive exposure may aggravate preexisting liver and kidney disease.

### 8. HANDLING PRECAUTIONS:

**EXPOSURE GUIDELINE(S):** For 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester{triclopyr, butoxyethyl ester}, the Dow Industrial Hygiene Guide is 2 mg/m<sup>3</sup> as the acid equivalent, Skin. Dow Industrial Hygiene Guide is 10 mg/m<sup>3</sup> for kerosene.

**VENTILATION:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

**SKIN PROTECTION:** For brief contact, no precautions other than clean body-covering clothing should be needed. Use impervious gloves when prolonged or frequently repeated contact could occur.

**EYE PROTECTION:** Use safety glasses.

### 9. ADDITIONAL INFORMATION:

**SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Keep out of reach of children. Do not use near heat or open flame. Avoid contact with eyes, skin or clothing. Do not ship or store with food, feeds, drugs, or clothing. Do not contaminate water, food, or feed by storage or disposal.

**MSDS STATUS:** Sections 6,7 and regsheets Revised 7/92.

### REGULATORY INFORMATION:

(Not meant to be all-inclusive—selected regulations represented).

**NOTICE:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

**SARA HAZARD CATEGORY:** This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard

A delayed health hazard

A fire hazard

### TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

**STATE RIGHT-TO-KNOW:** The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in Section 1 of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
KEROSENE	008008-20-6	NJ3 PA1

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

### OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

The Information Herein Is Given In Good Faith,  
But No Warranty, Express Or Implied, Is Made.  
Consult The DowElanco Company For Further Information.



Publishing Paper Division

Route 2 Box 672  
L'Anse, Michigan 49946  
906-524-6513  
Fax: 906-524-6899

July 15, 1999

Tricia Beaver  
Keweenaw Bay Indian Community  
Baraga, MI 49908

Dear Tricia:

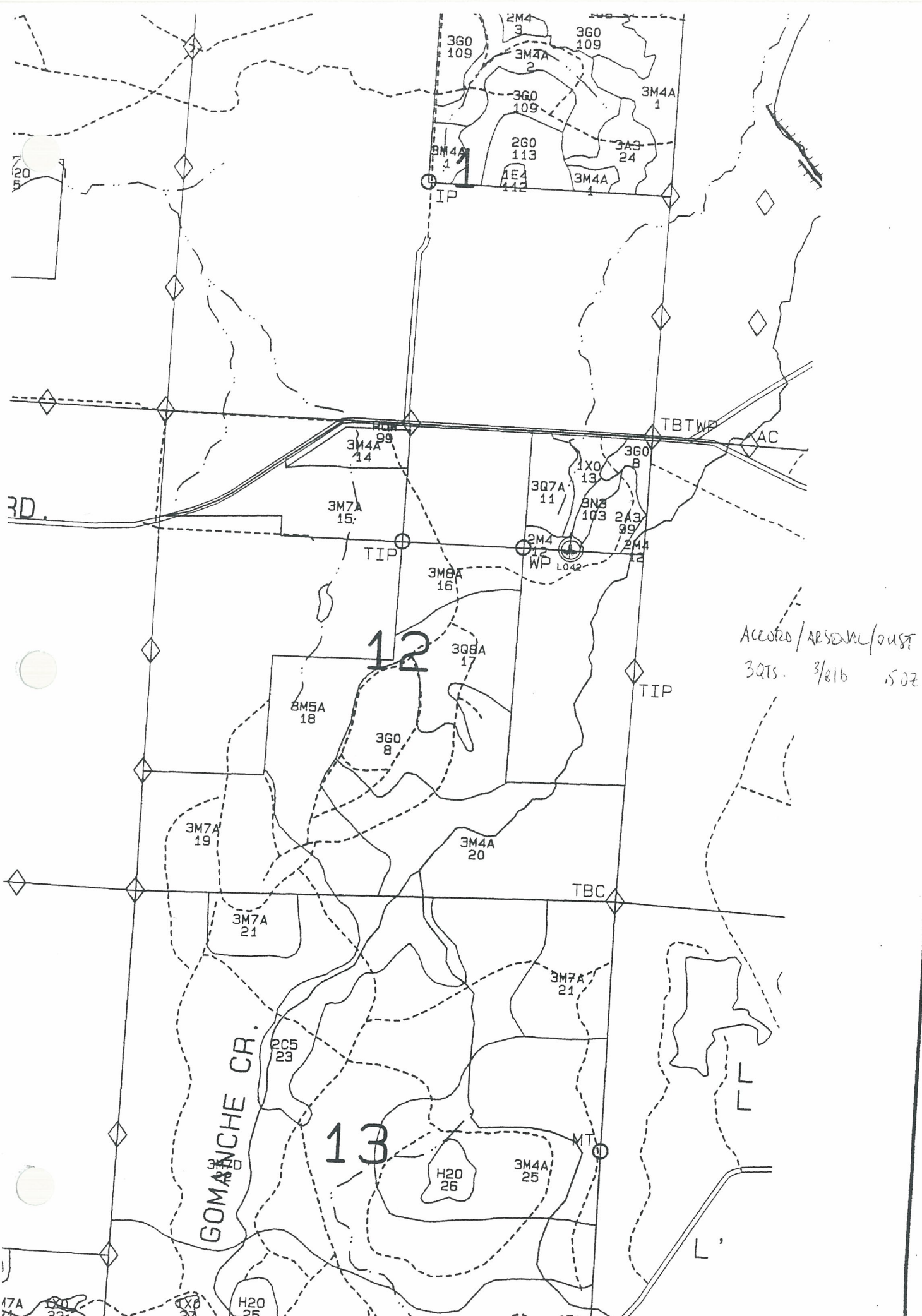
Sometime during the time period between July 19 and July 28, Mead will be doing a site preparation spray on seven of our future plantations within the tribal boundaries. Enclosed are copies of plat book pages and of Mead type maps describing the areas to be sprayed. I have also enclosed the MSDS for the site prep. chemicals, which are Accord, Arsenal, Oust, and Tordon 101.

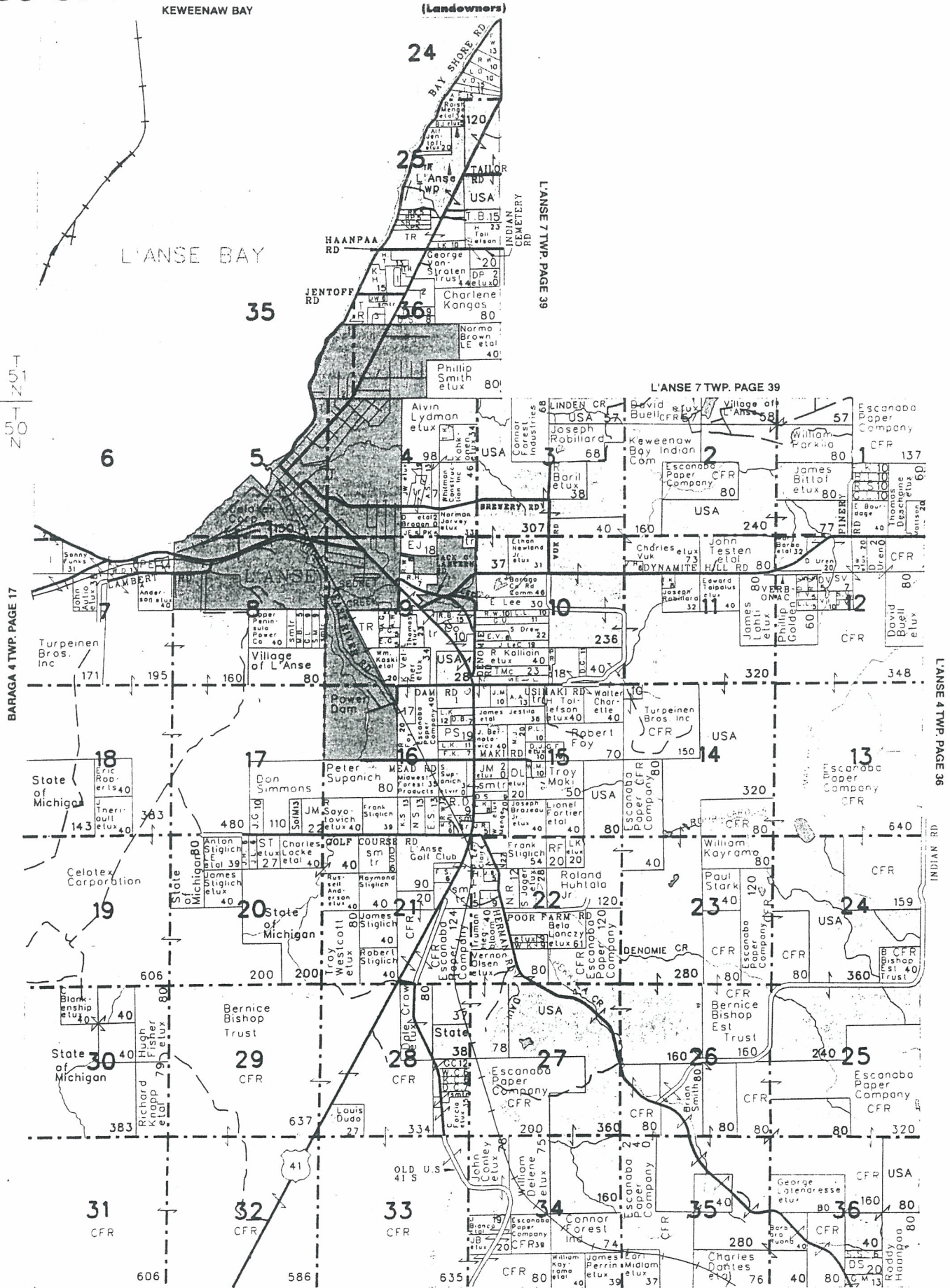
These herbicides eliminate woody brush, raspberry, and grasses from the future plantations. All of these herbicides have a slight odor at initial application but will not linger, except for Tordon 101 which can linger for a couple of weeks depending on the weather. The plantation which is being sprayed with Tordon 101 is not near anyone's dwelling. All landowners within one quarter mile of the affected area have been notified. This will be sprayed by a helicopter.

If you have any questions, please give me a call. Please refer to plantation # N076, N083, N090, N091, N101, N102 (Accord, Arsenal, Oust) and N084 (Tordon 101, Oust).

Sincerely,

Stephen R. Nelson  
District Regeneration Forester  
Mead Paper

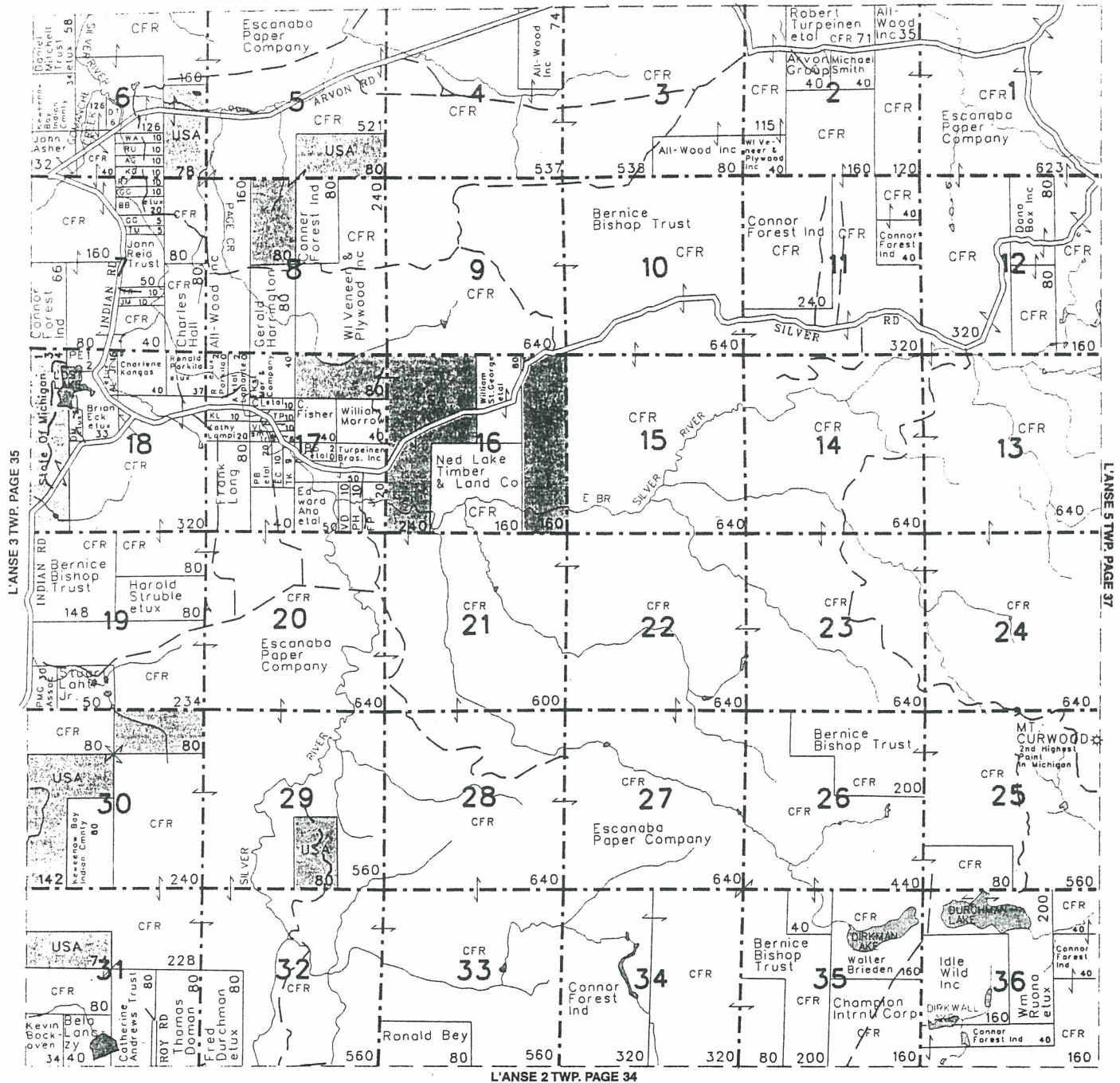




Accord / Arsenal / 10158  
3075, 3/81b, 507

3475. 3/816. 507

PAGE 3



**TURPEINEN  
BROS., INC.**  
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&  
TOTAL TREE CHIPPING  
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TELEPHONE: 338-2870  
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FAX: (906) 524-5071

**Robert Erickson, President**

U.S. 41 - L'Anse, Michigan

7:00 a.m. - 5:00 p.m. WEEKDAYS

9:00 a.m. - 3:00 p.m. SATURDAY



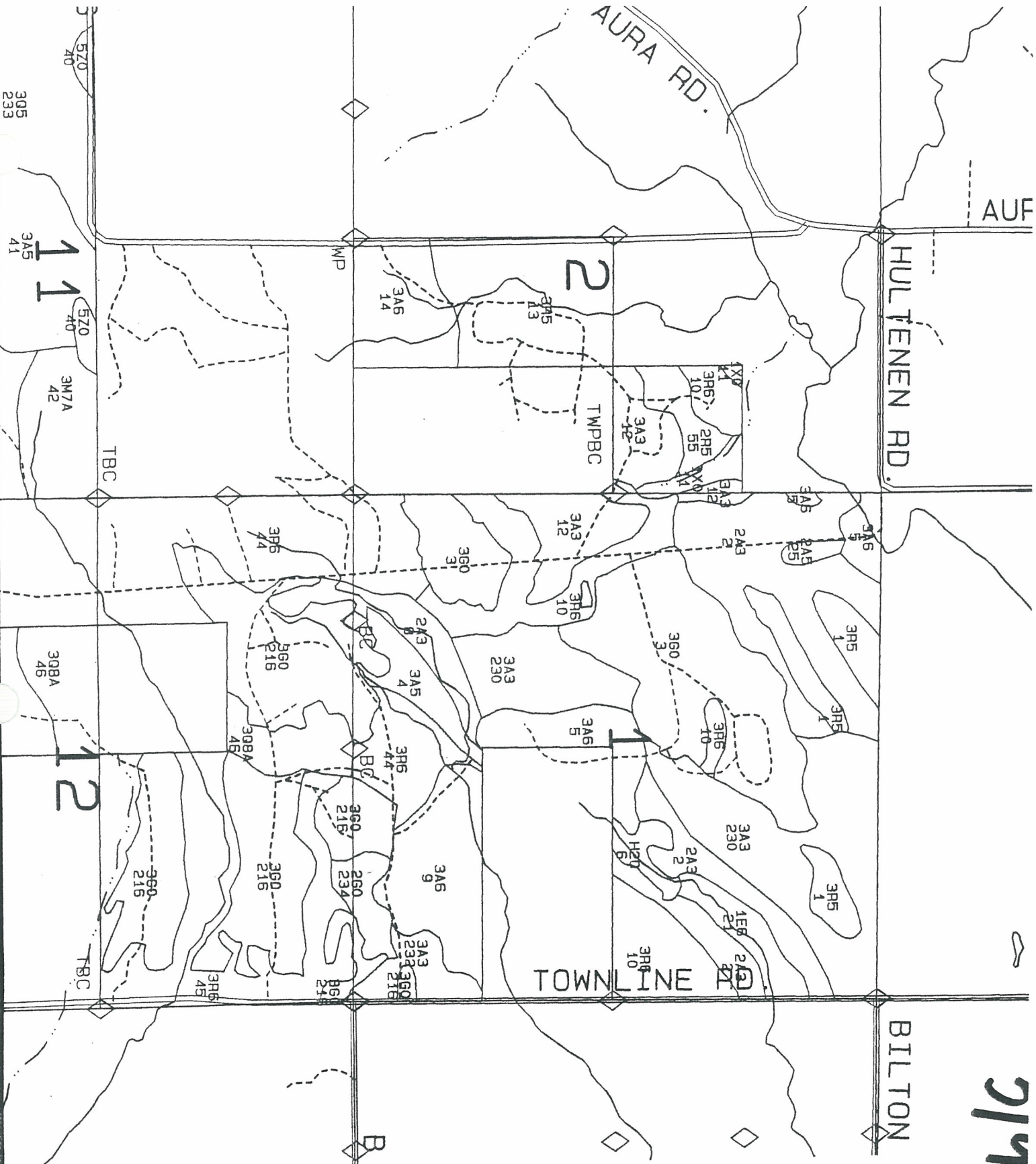
**Erickson Lumber  
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**(906) 524-6295**



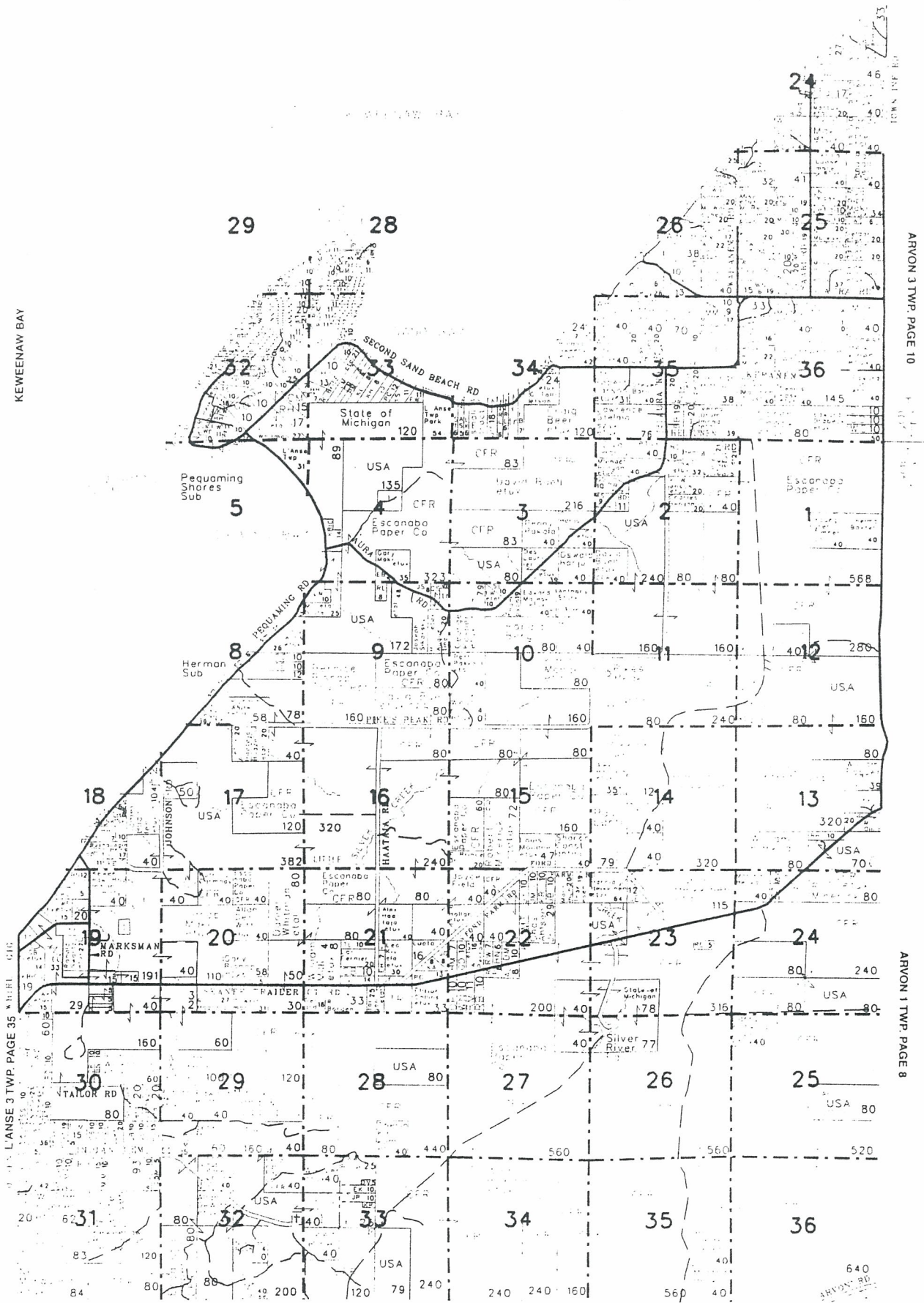
7199



TOWNS/DIST  
7075 10E  
ACROSS/ACROSS/DIST  
3075 3/8 1b 50E

(Landowners)  
KEWEENAW BAY

KEWEENAW BAY



L'ANSE 3 TWP. PAGE 35

L'ANSE 4 TWP. PAGE 36

# MONSANTO MATERIAL SAFETY DATA

NH0557

Page 1 of 4

MONSANTO PRODUCT NAME  
**ACCORD® Herbicide**

MONSANTO COMPANY  
800 N. LINDBERGH  
ST. LOUIS, MO 63167

Date Prepared: November, 1992

Emergency Ph. No. (Call Collect) (314) 694-4000

## PRODUCT IDENTIFICATION

EPA Registration Number:	524-326
Synonyms:	None
Chemical Name:	Not Applicable, Formulated Product
Active Ingredient:	*Glyphosate, N-phosphonomethyl glycine, in the form of its isopropylamine salt ..... 41.5%
Inert Ingredients:	..... 58.5%
	100.0%
	*Contains 480 grams per liter or 4.0 pounds per U.S. gallon of the active ingredient glyphosate, N-(phosphonomethyl) glycine in the form of its isopropylamine salt. Equivalent to 356 grams per liter or 3 pounds per U.S. gallon of the acid, glyphosate.
CAS Reg. No.:	Not Applicable, Formulated Product
CAS Reg. No. Active Ingredient:	1071-83-6
DOT Proper Shipping Name:	Not Applicable
DOT Hazard Class/I.D. No.:	Not Applicable
DOT Label:	Not Applicable
Reportable Quantity (RQ) Under Clean Water Act:	Not Applicable
U.S. Surface Freight Classification:	Weed killing compound, N.O.I.B.N.

## SARA Hazard Notification/Reporting

Section 302/304 - Emergency Planning and Release Notification: This product does NOT contain a listed extremely hazardous substance.

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): Not Applicable

Section 313 Toxic Chemical(s): Not Applicable

Hazardous Chemical(s) Under OSHA Hazard Communication Standard: Not Applicable

## WARNING STATEMENTS

Keep out of reach of children.

CAUTION!

MAY CAUSE EYE IRRITATION

REFORMULATION IS PROHIBITED

SEE CONTAINER LABEL FOR REPACKAGING LIMITATIONS

## PRECAUTIONARY MEASURES

- Avoid contact with eyes, skin or clothing
- Wash thoroughly with soap and water after handling.
- Do not contaminate water when disposing of equipment washwaters. Treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss can cause fish suffocation.

## EMERGENCY AND FIRST AID PROCEDURES

### First Aid:

If in Eyes: Flush with plenty of water for at least 15 minutes. Get medical attention.  
If on Skin: Flush with plenty of water. Wash clothing before reuse.

## OCCUPATIONAL CONTROL PROCEDURES

**Eye Protection:** Accord® herbicide does not present significant eye irritation or eye toxicity requiring special protection. Avoid eye contact as good Industrial practice.

**Skin Protection:** Accord® herbicide does not present significant skin concern requiring special protection.

**Respiratory Protection:** Undiluted Product: Respiratory protection should not be required during the normal handling of undiluted product. However, if abnormal exposure to heavy sprays or mists of undiluted product is likely, the use of NIOSH/MSHA approved equipment for pesticide vapor/mist is recommended. The respiratory use limitations specified by NIOSH/MSHA or the manufacturer should be observed.

Diluted Product: Under typical application conditions with normal use dilutions (as specified in the label instructions) no respiratory protection should be required.

**Ventilation:** No special precautions are recommended.

**Airborne Exposure Limits:**

<b>Product:</b>	<b>Accord® herbicide - 100% by weight:</b>	
	OSHA PEL/TWA: None established	ACGIH TLV/TWA/STEL: None established

## FIRE PROTECTION INFORMATION

**Flash Point:** >200°F **Method:** Tag Closed Cup

**Extinguishing Media:** Water spray, foam, dry chemical, CO<sub>2</sub>, or other class B extinguishing agent.

**Special Firefighting Procedures:** Firefighters or others who may be exposed to mists or products of combustion should wear a self-contained breathing apparatus. Equipment should be thoroughly cleaned after use.

**Unusual Fire and Explosion Hazards:** None

## REACTIVITY DATA

**Stability:** Stable for at least 5 years under normal conditions of warehouse storage. Heated facilities are not required. (See Storage, Spill/Leak & Disposal Information)

**Incompatibility:** Spray solutions of this product should be mixed, stored and applied only using stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT USING GALVANIZED OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

**Hazardous Decomposition Products:** None known.

**Hazardous Polymerization:** Does not occur. This product can react with caustic (basic) materials to liberate heat. This is not a polymerization but rather a chemical neutralization in an acid-base reaction.

## HEALTH EFFECTS SUMMARY

The following information summarizes human experience and results of scientific investigations reviewed by health professionals for hazard evaluation of Accord® herbicide and development of Precautionary Statements and Occupational Control Procedures recommended in this document.

## EFFECTS OF EXPOSURE

Inhalation and skin contact are expected to be the primary routes of occupational exposure to Accord® herbicide. Occupational exposure to this material has not been reported to cause significant adverse health effects. On the basis of available information, exposure to Accord® herbicide is not expected to produce significant adverse human effects when recommended safety precautions are followed.

## TOXICOLOGICAL DATA

Data from laboratory studies conducted by Monsanto with Accord® herbicide or a product of similar composition are summarized below.

Oral -	Practically Non-toxic, (Rat LD <sub>50</sub> - >5,000 mg/kg)
Dermal -	Practically Non-toxic, (Rabbit LD <sub>50</sub> - >5000 mg/kg)
Inhalation -	No More Than Slightly Toxic (Rat 4-hr LC <sub>50</sub> - >1.3 mg/L, the highest atmospheric concentration achievable in this study.)
Eye Irritation -	Nonirritating, (Rabbit, 0.0/110.0)
Skin Irritation -	Practically Nonirritating (Rabbit, 24-hr exposure, 0.1/8.0)

Additional toxicity information is available on glyphosate, the active herbicidal ingredient of ACCORD® herbicide. Following repeated exposures (90-days) to glyphosate in their feed, decreased weight gains were noted in mice, while no treatment-related effects occurred in rats. Following repeated skin exposure (3-weeks) to glyphosate, slight skin irritation was the primary effect observed in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure. There was not evidence of effects on the nervous system, including delayed effects in chickens (repeat oral doses) or cholinesterase inhibition in rats (single oral doses). Reduced body weight gain and effects on liver tissues were observed with long-term (2-year) feeding of glyphosate to mice. No adverse effects were observed in long-term feeding studies with rats (2-year) and dogs (1-year). Glyphosate did not produce tumors in any of these studies. **Based on the results from the chronic studies, EPA has classified glyphosate in Category E (evidence of non-carcinogenicity for humans).** No birth defects were noted in rats and rabbits given glyphosate orally during pregnancy, even at amounts which produced adverse effects on the mothers. No effects were seen on the ability of male or female rats to reproduce when fed glyphosate for three successive generations. Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells.

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## PHYSICAL DATA

Appearance:	Colorless solution
Odor:	Essentially odorless
pH:	4.6 - 4.8
Specific Gravity:	1.158 (Water = 1)

**NOTE:** These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

## SPILL, LEAK & DISPOSAL INFORMATION

### SPILL/LEAK:

Observe all protection and safety precautions when cleaning up spills -- see Occupational Control Procedures.

Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgite, bentonite or other absorbent clays. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under DISPOSAL. Thoroughly scrub floor or other impervious surfaces with a strong industrial type detergent solution and rinse with water.

Liquid spills that soak into the ground should be dug up, placed in plastic-lined metal drums and disposed of in accordance with instructions provided under DISPOSAL.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under DISPOSAL. Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs, seed or feed by storage or disposal.

### DISPOSAL:

Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Do not reuse container. Triple rinse container, then puncture and dispose of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### STORAGE:

Store above 10°F (-12°C) to keep from crystallizing.

Crystals will settle to the bottom. If allowed to crystallize, place in a warm room 68°F (20°C) for several days to redissolve, and roll or shake container or recirculate in mini-bulk containers to mix well before using. For bulk containers, see container label.

## ENVIRONMENTAL EFFECTS

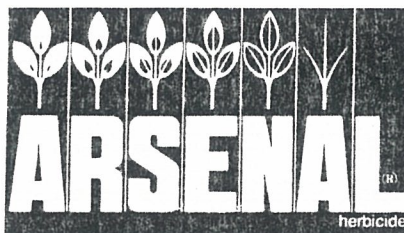
96-hr LC <sub>50</sub> Bluegill:	>1,000 mg/L, Practically Nontoxic
96-hr LC <sub>50</sub> Trout:	>1,000 mg/L, Practically Nontoxic
96-hr TL <sub>50</sub> Carp:	>1,000 mg/L, Practically Nontoxic
48-hr EC <sub>50</sub> <i>Daphnia</i> :	930 mg/L, Practically Nontoxic

DATE: November, 1992

SUPERSEDES: March, 1992    MSDS NO.: S00011151

FOR ADDITIONAL NON-EMERGENCY INFORMATION, CALL: 1-800-323-1421

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Monsanto Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.



# Applicators Concentrate

AMERICAN CYANAMID CO.  
WAYNE, NJ 07470

## MATERIAL SAFETY DATA SHEET

MSDS NO. AG09021-5  
CAS NO. 081510-83-0

DATE: JAN 14, 1992

EMERGENCY TELEPHONE: (201)-835-3100 (U.S.A.)

PRODUCT IDENTIFICATION	TRADE NAME: ARSENAL® Herbicide Applicators Concentrate			
	SYNONYMS: 2-(4-isopropyl-4-methyl-5-oxo-2-imidazolin-2-yl) nicotinic acid, salt with isopropylamine (1:1), 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid, salt with 2-propanamine (1:1); AC252,925; Imazapyr; Isopropylamine Salt; CL252,925			
	CHEMICAL FAMILY: Imidazolinone			
	MOLECULAR FORMULA: C <sub>13</sub> H <sub>15</sub> N <sub>3</sub> O <sub>3</sub> .C <sub>3</sub> H <sub>9</sub> N			
	MOLECULAR WEIGHT: 320.400			
	USAGE: Herbicide			
WARNING STATEMENTS	CAUTION. KEEP OUT OF REACH OF CHILDREN. AVOID CONTACT WITH SKIN, EYES, AND CLOTHING. AVOID BREATHING SPRAY MIST.			
INGREDIENTS	COMPONENT	CAS. NO.	%	PEL/TLV
	Inerts		46.90	None Establishe
	Isopropylamine	081510-83-0	53.10	None Establishe
	Salt of Imazapyr			
	REFERENCE: Inerts None			
	Isopropylamine Salt None			
	of Imazapyr			
PHYSICAL PROPERTIES	APPEARANCE AND	Clear green liquid with an		
	ODOR:	ammonia/amine-like odor		
	BOILING POINT:	100°C (212°F)		
	MELTING POINT:	Not Applicable		
	VAPOR PRESSURE:	Similar to water		
	SPECIFIC GRAVITY:	1.11 - 1.12		
	VAPOR DENSITY:	Similar to water		
	% VOLATILITY (BY VOL.):	~45 by weight		
	OCTANOL / H <sub>2</sub> O	1.3 [ai at 22°C]		
	PARTITION COEF.:			
	PH:	5.5 - 7.5		

(cont from pg. 1) SATURATION IN Not Available  
 AIR (BY VOL.):  
 EVAPORATION RATE: Not Available  
 SOLUBILITY IN Miscible  
 WATER:

**FIRE AND  
EXPLOSION  
HAZARD  
INFORMATION**

FLASH POINT: >210°F, >98.9°C (SETA  
closed cup)  
 FLAMMABLE LIMITS Not Applicable  
 (% BY VOL.):  
 AUTOIGNITION TEMP: > 93°C (200°F)  
 DECOMPOSITION TEMP: Not Available

FIRE EXTINGUISHING MEDIA:

Use water, alcohol foam, dry chemical or carbon dioxide to extinguish fires.

FIRE CONTROL TACTICS:

Wear self-contained, positive pressure breathing apparatus and full fire fighting protective clothing.

Keep unnecessary people away. Use as little water as possible. Dike area of fire to prevent pesticide run-off. Use spray or fog - solid stream may cause spreading.

Do not decontaminate personnel or equipment, or handle broken packages or containers without protective equipment as specified in the Exposure Control Section. Decontaminate emergency personnel with soap and water before leaving the fire area.

Avoid breathing dusts, vapors and fumes from burning materials. Control run-off water - if water enters a drainage system, advise the authorities downstream.

**NFPA HAZARD  
RATING**

(As Recommended by American Cyanamid Co.)		
0 Least	1	Flammability
1 Slight	/ \	/ \
2 Moderate	1 0	Health Reactivity
3 High	\ /	\ /
4 Severe		Special

**REACTIVITY DATA**

STABILITY: Stable  
 CONDITIONS TO AVOID: Strong oxidizing agents and alkalies.  
 POLYMERIZATION: Will not occur  
 INCOMPATIBLE: Strong oxidizing agents and alkalies.  
 MATERIALS: Corrosive to mild steel and brass.  
 HAZARDOUS: Combustion may produce oxides of  
 DECOMPOSITION: carbon and nitrogen.  
 PRODUCTS:

**HEALTH HAZARD  
INFORMATION****TOXICITY DATA AND  
EFFECTS OF OVEREXPOSURE:**ACUTE TOXICITY DATA:

The oral LD<sub>50</sub> for both male and female albino rats is greater than 5000 mg/kg indicating that this product is practically non-toxic by ingestion in single doses.

The dermal LD<sub>50</sub> for both male and female albino rabbits is greater than 2000 mg/kg indicating that this product is no more than slightly toxic by single skin applications.

The product is not irritating to the rabbit eye but it is mildly irritating to the rabbit skin.

CHRONIC TOXICITY DATA:**Mutagenicity:**

No mutagenic activity was observed in ARSENAL Technical (Imazapyr) by all test methods used. These included unscheduled DNA Synthesis Rat Hepatocyte Assay, in vitro Chinese Hamster Ovary (CHO)/Hypoxanthine Guanine Phosphoriboxyl Transferase (HGPRT) Mutation Assay, Bacterial/Microsome Reverse Mutation (Ames) Test and in vitro Chromosomal Aberrations in Chinese Hamster Ovary Cells.

**Teratogenicity:**

No teratogenic or fetotoxic effects were found at all dose levels tested in both rats and rabbits.

**Carcinogenicity:**

No oncogenic effects were observed at all dose levels tested in mice, rats and purebred beagle dogs.

Imazapyr is not listed as a human carcinogen by the IARC, OSHA or NTP.

Isopropylamine salt of Imazapyr present in this formulation is not listed as a human carcinogen by the IARC, OSHA or NTP.

**EMERGENCY AND FIRST AID PROCEDURES:**

IF ON SKIN: Wash with plenty of soap and water. Get medical attention if irritation persists.

IF IN EYES: Flush with plenty of water. Get medical attention if irritation persists.

IF SWALLOWED: Drink two glasses of water, induce

(cont from pg. 3) vomiting if the person is conscious. Obtain medical attention promptly.

IF INHALED: Remove to fresh air.

NOTES TO PHYSICIAN:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition.

MEDICAL CONDITION AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggest that overexposure is unlikely to aggravate existing medical conditions.

EXPOSURE  
CONTROL METHODS

During formulation of this product, use the following recommended industrial hygiene practices:

Wear chemical splash goggles to prevent contact with the eyes. If face-shield is used for protection, chemical splash goggles are still needed to protect the eyes.

Wear rubber gloves and apron to prevent contact with the skin. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

For end-users, refer to product label for personal protective clothing/equipment.

SPILL OR LEAK  
PROCEDURES

Absorb with an inert material such as clay or sawdust. Shovel into a metal container which can be sealed.

WASTE DISPOSAL: Dispose in accord with local, state, and federal regulations.

SPECIAL  
PRECAUTIONS

HANDLING AND STORAGE:

Because of this material's flash point, areas containing this material should conform to the codes, such as NFPA 30 and NFPA 70, governing Class III combustible liquids.

Do not contaminate water, food, or feed by storage or disposal. Store in a secure, dry, well-ventilated separate room, building or covered area.

Not for use or storage in or around the home.

Keep away from sources of ignition and protect from exposure to fire and heat.

Segregate from oxidizers and incompatible materials listed in the Reactivity Data Section.

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ADDITIONAL REGULATORY INFORMATIONSARA Title III DataSection 311 and 312 Hazard Categories

Immediate Health Hazard - <u>Y</u>	Reactive Hazard - <u>N</u>
Delayed Health Hazard - <u>N</u>	Sudden Pressure - <u>N</u>
Fire Hazard - <u>N</u>	Release Hazard

Section 302 Extremely Hazardous Substances - NoneSection 313 Toxic Chemicals - NoneCERCLA Reportable Quantity

None

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APPENDIX

ARSENAL® is a registered trademark of the American Cyanamid Company.

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of ar information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.

Last Revision Date: 3/26/90

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SOURCE AND	SHEET NO.: AG09021-5
DATE INFORMATION	DATE: JAN 14, 1992

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# Material Safety Data Sheet



## TORDON\* 101 Mixture Weed And Brush Killer (Private Label)

Emergency Phone: 517-636-4400  
General Phone: 1-800-352-6776

EPA Reg. Phone: 62719-5  
Effective Date: May 5, 1994  
Product Code: 87229  
MSDS Number: 000381  
DowElanco • Indianapolis, IN 46268

### 1. INGREDIENTS:

(% w/w, unless otherwise noted)

4-Amino-3,5,6-trichloropicolinic acid, (picloram) triisopropanolamine salt CAS# 006753-47-5 .....	10.2%
2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt CAS# 032341-80-3 .....	39.6%
Other ingredients, total, including: .....	50.2%
Water . . . CAS# 007732-18-5	
Isopropanol . . . CAS# 000067-63-0	
Proprietary surfactant	
Triisopropanolamine . . . CAS# 000122-20-3	

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

### 2. PHYSICAL DATA:

**BOILING POINT:** IBP >180°F, 82°C  
**VAPOR PRESSURE:** Approx. 32 mmHg @ 20°C  
**VAPOR DENSITY:** Not determ.  
**SOLUBILITY IN WATER:** Infinite  
**SPECIFIC GRAVITY:** 1.143 68/68°F, 20°C  
**APPEARANCE:** Dark brown liquid.  
**ODOR:** Not available.

### 3. FIRE AND EXPLOSION HAZARD DATA:

**FLASH POINT:** 114°F, 46°C  
**METHOD USED:** TCC  
**FLAMMABLE LIMITS:**  
LFL: Not determined  
UFL: Not determined  
**EXTINGUISHING MEDIA:** Water fog, alcohol foam, CO<sub>2</sub>, dry chemical.  
**FIRE & EXPLOSION HAZARDS:** Autoignition temperature 698°F, 370°C. Toxic, irritating vapors may be formed if product is involved in fire.  
**FIRE-FIGHTING EQUIPMENT:** Wear positive-pressure, self-contained breathing apparatus and full protective clothing. Do not allow water from fire fighting to enter domestic or irrigation water supplies.

### 4. REACTIVITY DATA:

**STABILITY:** (CONDITIONS TO AVOID) Combustible. Keep away from heat, open flames and sparks.

**INCOMPATIBILITY:** (SPECIFIC MATERIALS TO AVOID) None under normal use conditions. Under abnormal conditions avoid oxidizing materials and strong acids.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Hydrogen chloride and nitrogen oxides may be formed if product is involved in fire.

**HAZARDOUS POLYMERIZATION:** Will not occur.

### 5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

**ENVIRONMENTAL DATA:** Drift or runoff may adversely affect nontarget plants. For terrestrial uses, do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Read the product label for additional Environmental Hazards.

**ACTION TO TAKE FOR SPILLS/LEAKS:** Absorb small spills with inert material such as dry sand. In case of large spills, dike area to contain. Consult manufacturer for clean-up.

**DISPOSAL METHOD:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law and may contaminate groundwater. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA regional office for guidance.

### 6. HEALTH HAZARD DATA:

**EYE:** May cause moderate eye irritation which may be slow to heal. May cause slight transient(temporary) corneal injury.

**SKIN CONTACT:** Prolonged or repeated exposure may cause skin irritation, even a burn. May cause allergic skin reaction in susceptible individuals.

**SKIN ABSORPTION:** A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The LD<sub>50</sub> for skin absorption in rabbits is greater than 2000 mg/kg.

# Material Safety Data Sheet



**DowElanco**

## **TORDON\* 101 Mixture** **Weed And Brush Killer (Private Label)**

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**INGESTION:** Single dose oral toxicity is low. The LD50 for male rats and female rats is 2598 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. Ingestion may cause gastrointestinal irritation or ulceration.

**INHALATION:** Excessive exposure to isopropyl alcohol (a minor component) may cause eye, nose and throat irritation at around 400 ppm (the TLV concentration), and with prolonged (hours) and progressively higher levels, incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and even death may occur.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** Excessive exposure may cause liver, kidney, gastrointestinal, central nervous system and muscular effects. Signs and symptoms of excessive exposure may be nausea, vomiting, abdominal cramps, and/or diarrhea. Central nervous system (CNS) effects would not be likely unless there is excessive exposure to the most volatile (but minor) component of this formulation—isoopropanol. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol.

**CANCER INFORMATION:** Various animal cancer tests have shown no reliably positive association between 2,4-D exposure and cancer. Epidemiology studies on herbicide use have been both positive and negative, with the majority being negative. Picloram did not cause cancer in long-term animal studies.

**TERATOLOGY (BIRTH DEFECTS):** 2,4-D has caused birth defects in laboratory animals only at doses toxic to the mother (severe maternal toxicity). For picloram TIPA, birth defects are unlikely. Even exposures having an adverse effect on the mother should have no effect on the fetus. Isopropyl alcohol at extremely high concentrations (17 times the TLV) has been reported to cause birth defects and fetal toxicity in rats. At lower concentrations there were no effects on the fetus.

**REPRODUCTIVE EFFECTS:** In animal studies, picloram has been shown not to interfere with reproduction. Excessive dietary levels of 2,4-D caused decreased weight and survival in offspring in a rat reproduction study.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):** Results of in vitro (test tube) mutagenicity tests have been inconclusive. (various components). Results of mutagenicity tests in animals have been inconclusive (various components).

### **7. FIRST AID:**

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes and get medical attention promptly.

**SKIN:** Flush skin with plenty of water. Get medical attention if irritation persists.

**INGESTION:** Induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call physician. Do not induce vomiting or give anything by mouth to an unconscious person.

**INHALATION:** Remove individual to fresh air if effects occur. Consult a physician.

**NOTE TO PHYSICIAN:** If burn is present, treat as any thermal burn, after decontamination.  
No specific antidote.

Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

### **8. HANDLING PRECAUTIONS:**

**EXPOSURE GUIDELINES:** None established for 2,4-D trisopropylamine salt. The ACGIH TLV and OSHA PEL are 10 mg/m<sup>3</sup> for 2,4-D acid.

None established for picloram trisopropylamine salt; for picloram as the acid, the ACGIH TLV is 10 mg/m<sup>3</sup> and the OSHA PEL is 10 mg/m<sup>3</sup> total dust, 5 mg/m<sup>3</sup> respirable.

The ACGIH TLV and OSHA PEL are 400 ppm TWA, 500 ppm STEL for isopropanol.

The Dow Industrial Hygiene Guide is 2 mg/m<sup>3</sup> for the proprietary surfactant.

PEL's are in accord with those recommended by OSHA, as in the 1989 revision of PEL's.

**VENTILATION:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

**SKIN PROTECTION:** SKIN PROTECTION: For handling prior to end-use of this product, no precautions other than clean body-covering clothing should be needed for brief contact. When prolonged or frequently-repeated contact could occur, use protective clothing impervious to this product. Selection of specific items such as faceshield, boots, gloves, apron, or full-body suit will depend on operation.

For handling relative to end-use of this product, the Worker Protection Standard of 1993 requires that applicators and other handlers, including persons repairing or cleaning equipment, must wear long-sleeved shirt and

# Material Safety Data Sheet



## DowElanco TORDON\* 101 Mixture Weed And Brush Killer (Private Label)

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long pants; chemical-resistant gloves such as Barrier Laminate, Butyl Rubber, Neoprene Rubber, Natural Rubber, Polyvinyl Chloride (PVC), or Viton; and shoes and socks.

For containers of over 1 gallon but less than 5 gallons, persons engaged in pouring this product must also wear coveralls or chemical-resistant apron.

Users should remove personal protective equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. After work, remove all clothing, shower using soap and water, and change into clean clothing. Launder clothing worn during mixing, loading, application, or cleaning and repairing equipment before reuse.

Remove clothing immediately if pesticide gets inside.

Then wash thoroughly and put on clean clothing.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**EYE PROTECTION:** For handling prior to end-use, such as during manufacturing, wear chemical goggles. If vapor exposure causes eye discomfort, use a full-face respirator.

For handling relative to end-use, applicators and other handlers must wear protective eyewear, such as face shield or safety glasses (brow or temple protection is recommended). Eye protection is not required for ground or aerial applicators in completely enclosed cabs or cockpits.

### 9. ADDITIONAL INFORMATION:

**SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Keep out of reach of children. Causes substantial but temporary eye injury. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals. Harmful if swallowed or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Users should wash hands, face, and arms with soap and water as soon as possible after mixing, loading, or applying this product and before eating, smoking, or drinking. Wash hands and arms before using the toilet. For handling relative to end-use of this product, read the product label for further information concerning the use of personal protective equipment (PPE) under the Worker Protection Standard of 1993. Combustible. Do not use or store near heat or open flame. Do not contaminate water, food, or feed by storage or disposal.

**MSDS STATUS:** Revised sections 3,4,5,8,9, and regsheets.

### REGULATORY INFORMATION:

(Not meant to be all-inclusive—selected regulations represented).

**NOTICE:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

**SARA HAZARD CATEGORY:** This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard

A delayed health hazard

A fire hazard

### TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

**STATE RIGHT-TO-KNOW:** The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in Section 1 of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Isopropyl alcohol	000067-63-0	NJ1, NJ3, PA1, PA3
Triisopropanolamine	000122-20-3	PA1

NJ1=New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%).

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

(continued on next page)

# Material Safety Data Sheet



**DowElanco**

**TORDON\* 101 Mixture**

**Weed And Brush Killer (Private Label)**

Emergency Phone: 517-636-4400

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EPA Reg. Phone: 62719-5

Effective Date: May 5, 1994

Product Code: 87229

MSDS Number: 000381

DowElanco • Indianapolis, IN 46268

## OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## NATIONAL FIRE PROTECTION ASSOCIATION

### (NFPA) RATINGS:

Category .....	Rating
Health .....	2
Flammability .....	2
Reactivity .....	0

The Information Herein Is Given In Good Faith,  
But No Warranty, Express Or Implied, Is Made.  
Consult DowElanco For Further Information.



Du Pont Agricultural Products

M0000028

Revised 19-NOV-1994

Printed 15-FEB-1995

## "Oust" Herbicide

### CHEMICAL PRODUCT/COMPANY IDENTIFICATION

#### Material Identification

"Oust" is a registered trademark of DuPont.

Corporate MSDS Number

DU003048

#### Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont

1007 MARKET STREET

WILMINGTON, DE 19898

#### PHONE NUMBERS

Product Information

1-800-441-7515

Transport Emergency

CHEMTREC 1-800-424-9300

Medical Emergency

1-800-441-3637

### COMPOSITION/INFORMATION ON INGREDIENTS

#### Components

##### Material

CAS Number

%

SULFOMETURON METHYL

74222-97-2

75

(METHYL 2-[[[(4,6-DIMETHYL-2-PYRIMIDINYL)-

AMINO]CARBONYL]AMINO]SULFONYL]BENZOATE)

INERT INGREDIENTS

25

### HAZARDS IDENTIFICATION

#### Potential Health Effects

CAUTION! May irritate eyes, nose, throat and skin.

#### ROUTES OF EXPOSURE AND EFFECTS

Acute Oral LD50: >5,000 mg/kg (rat)

(Continued)

Oust

# 338

**HAZARDS IDENTIFICATION** (Continued)

Very low order of toxicity.

Acute Dermal LD50: > 8,000 mg/kg (rabbit) males  
> 2,000 mg/kg (rabbit) females  
Slight to moderate order of toxicity.

**SKIN IRRITATION AND SENSITIZATION**

Not a primary skin irritant; not a sensitizer

**EYE IRRITATION**

Mild transient conjunctival irritation with slight corneal cloudiness and no irritic effects. Eyes were normal within 3-4 days.

**INHALATION**

4 hour LC50 (rat): 5mg/L  
Moderate order of toxicity.

**CHRONIC STUDIES - SULFOMETURON METHYL**

The effects in animals from single exposure by ingestion include nonspecific clinical changes. Repeated exposures of high doses resulted in decreased body weight gain, liver changes, and red blood cell hemolysis. Long term exposure caused mild hemolytic anemia, decreased body weight, alteration of clinical chemical parameters, and changes in the bile duct.

Animal testing indicates that this compound does not have carcinogenic effects. Developmental toxicity was observed but only at maternally toxic dose levels. In a two generation rat reproduction study, decreased numbers of pups were observed at the 5,000 ppm level, a dose that was also maternally toxic. There were no effects on fertility and no reproductive effects were observed at 500 ppm.

The compound does not produce genetic damage in any of four tests conducted in bacterial and mammalian cell cultures.

**HUMAN HEALTH EFFECTS**

Overexposure by skin contact may initially include: skin irritation with discomfort or rash. Eye contact may initially include: eye irritation with discomfort, tearing, or blurring of vision.

Based on data from animal studies higher exposures may lead to these effects: red blood cell destruction.

Significant skin permeation, and systemic toxicity, after contact appears unlikely. There are no reports of human

(Continued)

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**HAZARDS IDENTIFICATION**(Continued)

---

sensitization.

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**Carcinogenicity Information**

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None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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**FIRST AID MEASURES**

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**First Aid****INHALATION**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**SKIN CONTACT**

Flush skin with water after excessive contact.

**EYE CONTACT**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**INGESTION**

No specific intervention is indicated as compound is not likely to be hazardous by ingestion. Consult a physician if necessary.

---

**FIRE FIGHTING MEASURES**

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**Flammable Properties**

Flammable limits in Air, % by Volume  
LEL 0.092 g/L

Not a fire or explosion hazard.

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air.

**Extinguishing Media**

Water Spray, Foam, Dry Chemical, CO2.

**Fire Fighting Instructions**

Wear self-contained breathing apparatus. Wear full protective equipment. Use water spray. Runoff from fire control may be a pollution hazard.

If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the contamination hazard.

(Continued)

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## ACCIDENTAL RELEASE MEASURES

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### Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

### Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or low areas.

### Spill Clean Up

Shovel or sweep up.

### Accidental Release Measures

If spill area is on ground used to produce crops or other valuable vegetation, or if area is adjacent to water used for irrigation, remove soil to depth of spill wetting.

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## HANDLING AND STORAGE

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### Handling (Personnel)

Avoid breathing vapors or mist. Avoid breathing dust. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

### Handling (Physical Aspects)

Keep away from heat, sparks and flames.

### Storage

Store in a well ventilated place.

Do not contaminate water, other pesticides, fertilizers, food or feed in storage.

---

## EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

### Personal Protective Equipment

Always follow label instructions when using this product.

Applicators and other handlers must wear:

Long-sleeved shirt and long pants

Waterproof gloves

Shoes plus socks

Follow manufacturer's instructions for cleaning, maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other

(Continued)

**EXPOSURE CONTROLS/PERSONAL PROTECTION**(Continued)

laundry.

PPE required for early entry into treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

Coveralls  
Waterproof gloves  
Shoes plus socks

**# Exposure Guidelines****Applicable Exposure Limits**

SULFOMETURON METHYL

PEL (OSHA)	None Established
TLV (ACGIH)	5 mg/m <sup>3</sup> , 8 Hr. TWA, A4
AEL * (Du Pont)	10 mg/m <sup>3</sup> , 8 & 12 Hr. TWA total dust

\* AEL is Du Pont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

**PHYSICAL AND CHEMICAL PROPERTIES****Physical Data**

Solubility in Water	Dispersible
Odor	None
Form	Solid, dry flowable
Color	Off-white
Bulk Density (Loose)	33 lb/cu ft
Bulk Density (Packed)	39 lb/cu ft

**STABILITY AND REACTIVITY****Chemical Stability**

Stable at normal temperatures and storage conditions.

**Incompatibility with Other Materials**

None reasonably foreseeable.

**Decomposition**

Decomposition will not occur.

**Polymerization**

Polymerization will not occur.

(Continued)

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**ECOLOGICAL INFORMATION**

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**Ecotoxicological Information**  
**Aquatic Toxicity**

Sulfometuron Methyl

96 hour LC50, rainbow trout: &gt;12.5 ppm

**Environmental Toxicity**

Oral LC50, mallard ducks: &gt;5,000 ppm

Oral LC50, bobwhite quail: &gt;5,620 ppm

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**DISPOSAL CONSIDERATIONS**

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**Waste Disposal**

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal**

Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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**TRANSPORTATION INFORMATION**

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**Shipping Information**

DOT/IMO

Proper Shipping Name

NOT REGULATED

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**REGULATORY INFORMATION**

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**U.S. Federal Regulations**

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : No  
Fire : No  
Reactivity : No  
Pressure : No

(Continued)

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**OTHER INFORMATION**

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**NFPA, NPCA-HMIS**

NFPA Rating

Health

1

Flammability

1

Reactivity

0

NPCA-HMIS Rating

Health

1

Flammability

1

Reactivity

0

Personal Protection rating to be supplied by user depending on use conditions.

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**Additional Information**

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This product is registered under EPA/FIFRA regulations.  
The EPA Reg. No. is 352-401

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS

Address

Telephone

Du Pont

Agricultural Products

Wilmington, DE 19898

800-441-7515

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# Indicates updated section.

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End of MSDS

MeadWestvaco Corporation  
Post Office Box 100  
Champion, MI 49814

Forestry Division  
tel 906 339 2281  
fax 906 339 4126

## MeadWestvaco

Eric Oliphant  
BIA Forestry  
P.O. Box 637  
Baraga, MI 49908

September 4, 2002

Dear Eric:

Next week, MeadWestvaco will be involved in a herbicide spray operation within the Keweenaw Bay Indian Community's reservation boundaries. Enclosed you will find copies of MeadWestvaco type maps of the spray areas as well as copies of plat book pages showing the general areas we will spray. These areas will be sprayed with a helicopter unit. Our helipad will be in the Dynamite Hill pit.

During this spray session, we will spray Dupont GLYPHOSATE VMF. This is a release herbicide which will rid the site of raspberry, cherry, grasses, and will slow the growth of stump sprout maple. When sprayed after the red pine dormancy, it will not hurt red pine. We spray this at a rate of 1.5 quarts per acre. Enclosed is an MSDS for Glyphosate vmf, and a label copy of the "Directions for use" pamphlet. If you have any questions regarding this spray operation, please call me.

It looks like we may be spraying these sites the week of September 9 – 13, 2002. When I find out a more exact time, I'll call you in case you would like to observe the operation. If you have any questions, my office number is (906)-339-2281 ext. 14, or my truck phone number is 630-2749.

If anyone else needs this information, could you make sure they either see this copy, or if need be, I'll send them copies of this also. Please just let me know if you need me to send other copies.

Thank you very much.

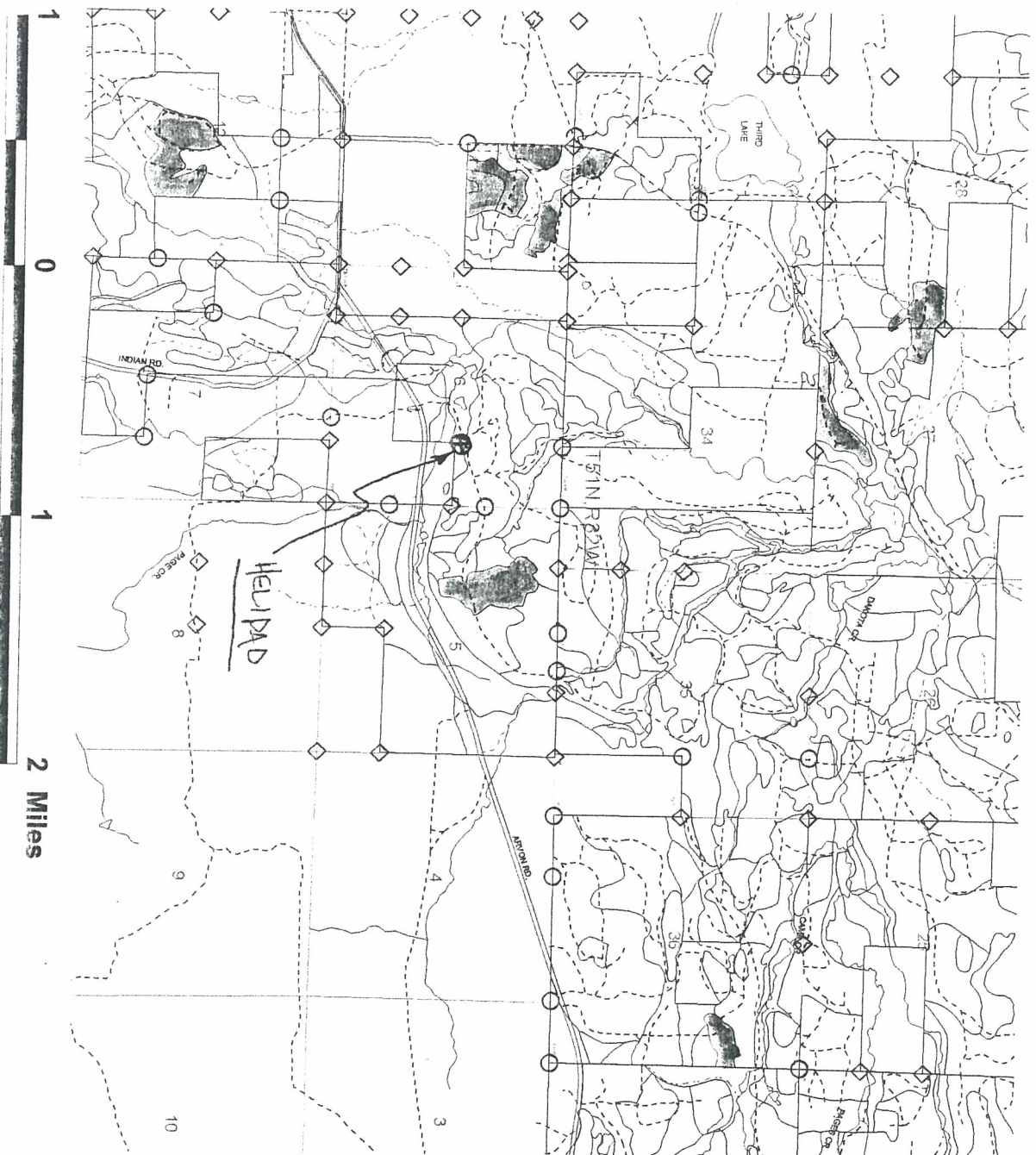
Sincerely,



Stephen R. Nelson  
West Area Regeneration Forester

Enc.

# MEADWESTVACO FALL GLYPHOSATE SPRAY WITHIN TRIBAL BOUNDARIES



PLANTATIONS  
TO BE SPRAYED W/ GLYPHOSATE MAP

KEWEEENAW BAY

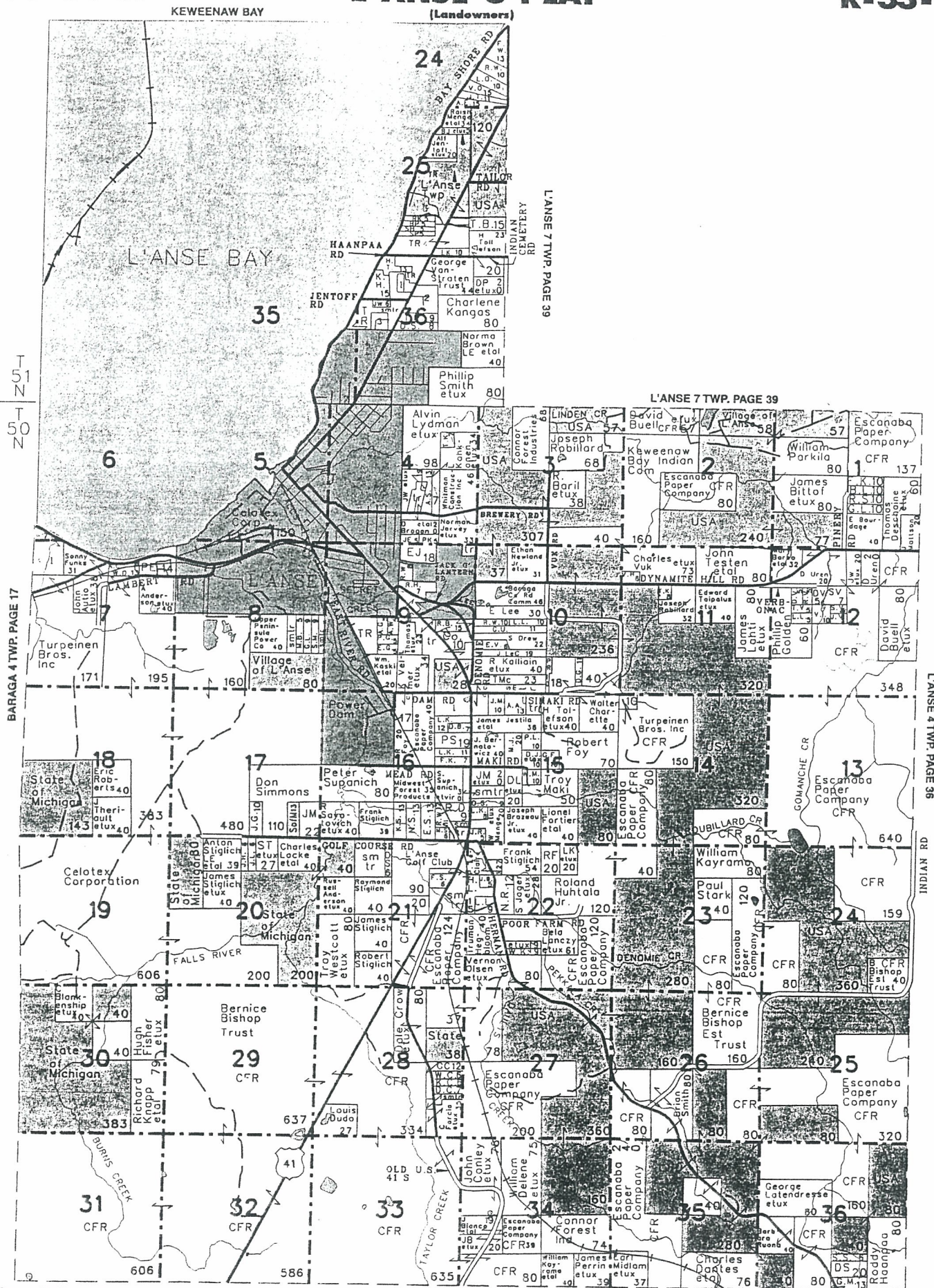
ARVON 3 TWP. PAGE 10

$$\begin{array}{r} T \\ 52 \\ N \\ \hline T \\ 51 \\ N \end{array}$$

ARVON 1 TWP. PAGE 8

OLSEN L'ANSE 3 TWP. PAGE 35 WHIRL-I-CIG

L'ANSE 4 TWP. PAGE 36



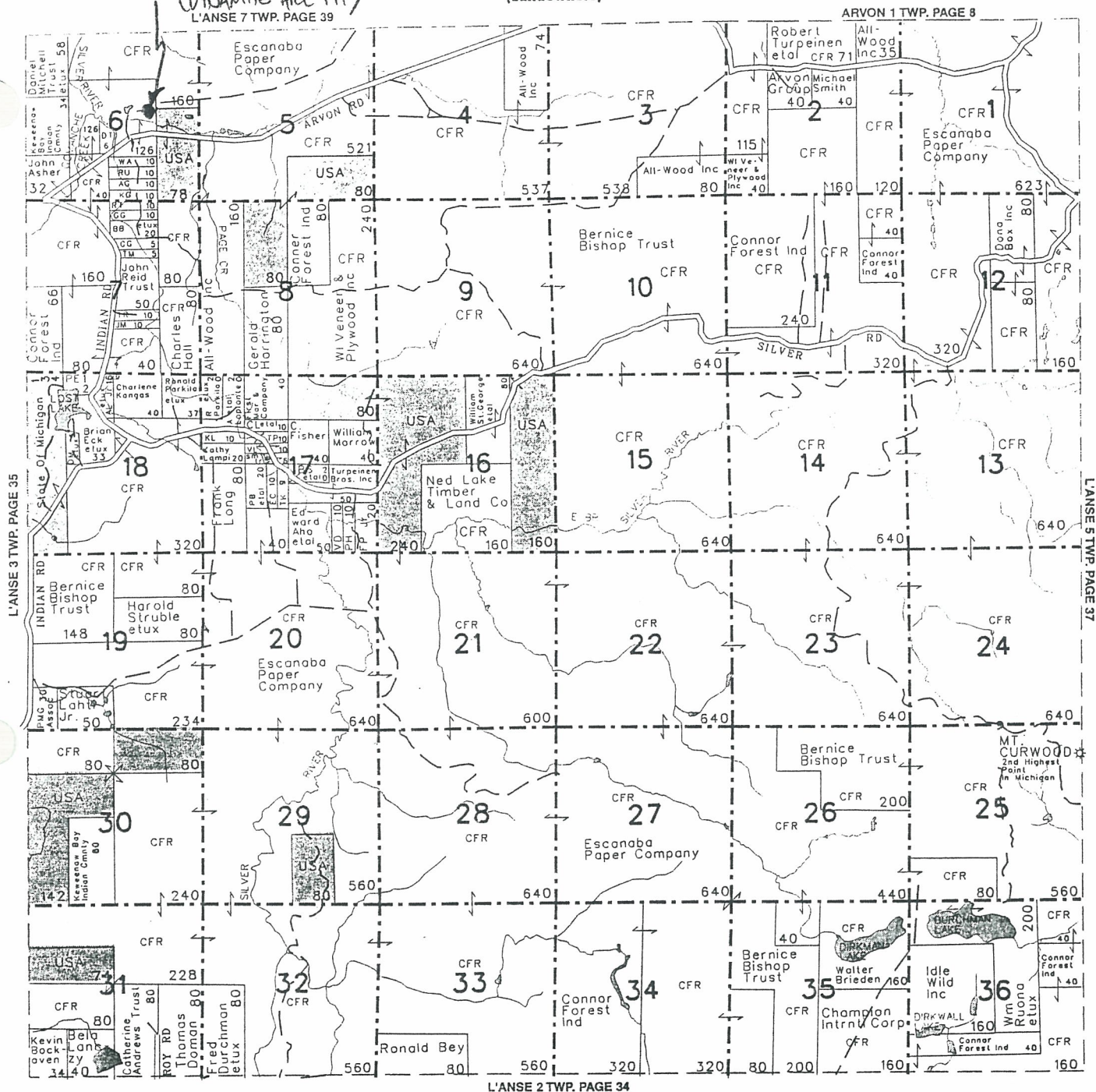
T-50-N

HELIPAD  
(DYNAMITE HILL PIT)  
L'ANSE 7 TWP. PAGE 39

L'ANSE 4 PLAT

(Landowners)

R-32-W



L'ANSE 2 TWP. PAGE 34

**TURPEINEN  
BROS., INC.**  
LAND CLEARING  
&  
TOTAL TREE CHIPPING  
BOX 177, ALSTON, MICHIGAN  
TELEPHONE: 338-2870  
WE BUY STUMPAGE & LAND

### Erickson Lumber Inc.

#### FOREST PRODUCTS

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Saw Mill & Dry Kiln  
Planing

(906) 524-7722

FAX: (906) 524-5071

### Erickson Lumber Outlet

Tongue & Grooved Paneling  
Rough & Planed Lumber  
Building Supplies • Plywood

(906) 524-6295

**Robert Erickson, President**

U.S. 41 - L'Anse, Michigan  
7:00 a.m. - 5:00 p.m. WEEKDAYS  
9:00 a.m. - 3:00 p.m. SATURDAY



See Page 56 For Additional Names.

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The MSDS format adheres to U.S. standards and regulatory requirements and may not meet regulatory requirements in other countries.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience are gained.

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## " DuPont " GLYPHOSATE VMF HERBICIDE

M0000453

Revised 1-FEB-2001

Printed 8-FEB-2001

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### CHEMICAL PRODUCT/COMPANY IDENTIFICATION

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#### Company Identification

##### MANUFACTURER/DISTRIBUTOR

DuPont  
1007 Market Street  
Wilmington, DE 19898

##### PHONE NUMBERS

Product Information : 1-800-441-7515  
Transport Emergency : CHEMTREC 1-800-424-9300  
Medical Emergency : 1-800-441-3637

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### COMPOSITION/INFORMATION ON INGREDIENTS

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#### Components

Material	CAS Number	%
GLYPHOSATE	1071-83-6	53.8
Glyphosate, N-(phosphonomethyl)glycine, in the forms of its isopropylamine salt		
Inert Ingredients		46.2

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### HAZARDS IDENTIFICATION

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## Emergency Overview

APPEARANCE AND ODOR: Clear, viscous amber-colored solution

### CAUTION STATEMENTS:

Keep out of the reach of children.

### CAUTION!

CAUSES SUBSTANTIAL BUT TEMPORARY EYE INJURY.

HARMFUL IF SWALLOWED OR INHALED.

Do not get in eyes or on clothing.

Avoid breathing vapor or spray mist.

## Potential Health Effects

### EYE

May cause pain, redness and tearing based on toxicity studies.

### SKIN

No more than slightly toxic and no more than slightly irritating based on toxicity studies.

### INGESTION

No more than slightly toxic based on toxicity studies. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed. Ingestion of similar formulations has been reported to produce gastrointestinal discomfort with irritation of the mouth, nausea, vomiting and diarrhea. Oral ingestion of large quantities of one similar product has been reported to result in hypotension and lung edema.

### INHALATION

No more than slightly toxic if inhaled based on toxicity studies.

## Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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## FIRST AID MEASURES

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## First Aid

### INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

### SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

### EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

### INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

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## FIRE FIGHTING MEASURES

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### Flammable Properties

#### Flash Point

This material is not combustible as tested by the Tag Cup Test.

### Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

### Fire Fighting Instructions

Wear self-contained breathing apparatus. Wear full protective equipment.

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## ACCIDENTAL RELEASE MEASURES

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### Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

### Spill Clean Up

Small Spills - For a spill less than one gallon on floor or other impervious surface, soak up with towels or other absorbent material and discard in the trash. Clean the spill area with soap and water and rinse the area thoroughly.

Large liquid spills - on the floor or other impervious surface should be contained or diked and then absorbed with attapulgite, bentonite or other absorbent clays. Collect the contaminated absorbent, place in a metal drum and dispose of in accordance with the instructions provided under Disposal. Thoroughly scrub floor or other impervious surface with a strong industrial detergent and rinse with water.

Large spills that soak into the ground should be dug up, placed in metal drums and disposed of in accordance with instructions provided under Disposal. Contact appropriate state agency when considering a land spreading disposal option.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Disposal. Any recovered spilled liquid should be similarly collected and disposed of.

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## HANDLING AND STORAGE

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### Handling (Personnel)

Do not get in eyes, on skin or clothing. Avoid breathing vapors or mist. Wash thoroughly after handling. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. Wash clothing after use.

Treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss can cause fish suffocation.

### Handling (Physical Aspects)

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.

Do not contaminate water when disposing of equipment washwaters.

### Storage

Store above 10 degrees F (-12 degrees C) to keep from crystallizing. Crystals will settle to the bottom. If allowed to crystallize, place in a warm room at 68 degrees F (20 degrees C) for several days to redissolve and mix well before using. Do not contaminate water, foodstuff, feed or seed by storage or disposal.  
[EOB]

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## EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Personal Protective Equipment

EYE/FACE PROTECTION: Wear safety glasses or coverall chemical splash goggles.

RESPIRATORS: Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

PROTECTIVE CLOTHING: Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

RESPIRATORS: Wear a NIOSH approved respirator if there is potential for exposure to airborne dusts, mists or vapors.

Ventilation: No special precautions are recommended.

### Exposure Guidelines

#### Exposure Limits

" DuPont " GLYPHOSATE VMF HERBICIDE  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established

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## PHYSICAL AND CHEMICAL PROPERTIES

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### Physical Data

Color : Colorless.  
Form : Liquid.  
Odor : Odorless.  
pH : 4.6-4.8  
Specific Gravity : 1.22-1.25 (water=1)

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## STABILITY AND REACTIVITY

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### Chemical Stability

Stable at normal temperatures and storage conditions.

### Conditions to Avoid

Store above 10 degrees F (-12 degrees C) to keep from crystallizing.

### Incompatibility with Other Materials

Spray solutions of this product should be mixed, stored, or applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined containers.

Do not mix, store or apply this product or spray solutions of the product in galvanized or unlined steel (except stainless steel) containers or spray tanks. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

### Polymerization

Does not occur. This product can react with caustic (basic materials to liberate heat. This is not a polymerization but rather a chemical neutralization in an acid base reaction.

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## TOXICOLOGICAL INFORMATION

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### Animal Data

#### TOXICOLOGICAL DATA:

Data from laboratory studies conducted by Monsanto with Rodeo(R) Emerged Aquatic Weed and Brush Herbicide are summarized below.

Oral - Practically Non-toxic, (Rat LD50 - >5,000 mg/kg)

Dermal - Practically Non-toxic, (Rabbit LD50 - >5000 mg/kg)

Inhalation - Slightly Toxic, (Rat 4-hr LC50 - >1.3 mg/l, the highest atmospheric concentration achievable in this study); FIFRA Category III, Not DOT poisonous

Eye Irritation - Non irritation, - Rabbits (6 animals); 24-hr exp.; Draize Average: : 0.0/110; EU:  
Corneal Opacity - 0.0, Iris - 0.0, Erythema - 0.0, Chemosis -

0.0

Skin Irritation - Practically Nonirritating - Rabbits (6 animals); 24-hr exp.; Draize Average: 0.1/8.0; EU: Erythema - 0.1, Edema - 0.0

In repeat dosing studies (6 months), dogs fed DuPont Glyphosate VMF Herbicide exhibited slight body weight changes. Following repeated skin exposure (3 weeks) to Dupont Glyphosate VMF Herbicide, skin irritation was the only effects in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure.

Additional toxicity information is available on glyphosate, the active ingredient of DuPont Glyphosate VMF Herbicide. Following repeated exposures (90-days) to glyphosate in their feed, decreased weight gains were noted at the highest levels in mice, while no treatment-related effects occurred in rats. Following repeated skin exposure (3 weeks) to glyphosate, slight skin irritation was the primary effect observed in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure. There was no evidence of effects on the nervous systems, including delayed effects in chickens (repeated oral doses) or cholinesterase inhibition in rats (single oral doses). Reduced body weight gain and effects on liver tissue were observed with long term (2-year) feeding of glyphosate to mice at high-dose levels. Reduced body weight gain and eye changes were observed at the high dose levels in one long term (2 year) feeding study in rats, while no treatment-related effects occurred in a second study. No adverse effects were observed in feeding studies with dogs. Glyphosate did not produce tumors in any of these studies. Based on the results from the chronic studies, EPA has classified glyphosate in category E (evidence of non-carcinogenicity for humans). No birth defects were noted in rats and rabbits given glyphosate orally during pregnancy, even at amounts which produced adverse effects on the mothers. Glyphosate was fed continuously to rats at very high dose levels for 2 successive generations. Toxicity was reported in offspring from the high dose, a level which also produced adverse effects on mothers. In a 3 generation study conducted at lower dose levels, no effects were seen on the ability of male or female rats to produce. Glyphosate has produced no genetic changes in a variety of standard tests using animals and animals or bacteria cells.

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## ECOLOGICAL INFORMATION

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Ecotoxicological Information

Ecotoxicological Information

96-hr LC50 Bluegill: >1,000 mg/l, Practically Nontoxic  
96-hr LC50 Trout: >1,000 mg/l, Practically Nontoxic  
48-hr LC50 Daphnia: 930 mg/l, Practically Nontoxic  
Oral LD50 Goat: 5/700 mg/kg, Practically Nontoxic

Brahman-cross heifers were given Rodeo(R) Emerged Aquatic Weed and Brush herbicide, by gavage, at daily dosages of 0, 540, 830, 1290 and 2000 mg/kg for 7 consecutive days. Clinical signs of toxicity, including loss of appetite, diarrhea and death (1290 and 2000 mg/kg) were observed at 830 mg/kg or above. The no-effect level was considered to be 540 mg/kg day.

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## DISPOSAL CONSIDERATIONS

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### Waste Disposal

Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Do not cut or weld on or near this container.

Metal Drums - Triple rinse container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Plastic Drums - Do not reuse container. Return container per the Monsanto container return program. If not returned, triple rinse container, then puncture and dispose of in a sanitary landfill, or by incineration, or if allowed, by state and local authorities, by burning. If burned, stay out of smoke.

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## TRANSPORTATION INFORMATION

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### Shipping Information

DOT  
Not Regulated.

U.S Surface Freight Classification: Weed killing compound,  
N.O.I.B.N.

## REGULATORY INFORMATION

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### U.S. Federal Regulations

TSCA Inventory Status : All components in compliance with TSCA  
Inventory requirements.

EPA Reg. No. 352-609

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## OTHER INFORMATION

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### Additional Information

Technical data, based on Monsanto Company MSDS dated January  
1998.

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The data in this Material Safety Data Sheet relates only to the  
specific material designated herein and does not relate to use in  
combination with any other material or in any process.

Responsibility for MSDS: DuPont Agricultural Products  
Address : Wilmington, DE 19898  
Telephone : 800-441-7515

End of MSDS